

CRASPEDOSOMID MILLIPEDES DISCOVERED IN AUSTRALIA:
REGINATERREUMA, *NEOCAMBRISOMA* AND *PETERJOHNSIA*, NEW GENERA
(MYRIAPODA: DIPLOPODA: CRASPEDOSOMIDA)

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ABSTRACT

The order Craspedosomida has been discovered in Australia (Great Dividing Range) and three new genera are described. Both *Reginaterreuma* (from NE Queensland) and *Neocambrisoma* (from NE New South Wales) belong to the suborder Chordeumidea (known also in New Zealand and New Guinea) and the latter is the type genus of a new family. *Peterjohnsia*, also the type genus of a new family, was collected in the Bellenden Ker Range (NE Queensland) and is the first representative of the suborder Craspedosomoidea to be found in the southern Hemisphere.

RÉSUMÉ

Pour la première fois, l'ordre des Craspedosomides est signalé en Australie (Great Dividing Range) par trois genres nouveaux. *Reginaterreuma* (du N.E. du Queensland) et *Neocambrisoma* (du N.E. des Nouvelles Galles du Sud), ce dernier générotype d'une famille nouvelle, appartiennent au sous-ordre des Chordeumidea (connu de Nouvelle-Zélande et de Nouvelle-Guinée). *Peterjohnsia*, également générotype d'une nouvelle famille, a été récolté dans les montagnes du Bellenden Ker (N.E. du Queensland); c'est le premier représentant du sous-ordre des Craspedosomoidea dans l'Hémisphère Sud.

INTRODUCTION

Abundantly represented in all the temperate regions of the Northern Hemisphere, the order Craspedosomida (= Chordeumida *auctorum*) is rare south of the equator. Till now, it had only been reported in Chili (*Eudigona* and *Apodigona*), New Zealand (*Schedotrigona*) and Indonesia and New Guinea (families Heterochordeumidae and Metopidiothricidae). Unknown in Africa and Madagascar, it was considered absent from Australia until Jeekel (1981) collected some specimens in New South Wales and Tasmania in 1980.

Material deposited in the Queensland Museum (QM) contains Craspedosomids collected in 1970 by H. Williams in SE Queensland (Mt Glorious), and in 1975 by R. Monroe and V. Davies north of Cairns (NE Queensland). In 1980, at about the same time as Jeekel, R. Raven also collected specimens in the Coffs Harbour area (New South Wales) and a year later, Peter M. Johns of Christchurch, investigating soil fauna in the Bellenden Ker Range (NE Queensland), collected more abundant material. The whole of this

material (except for Jeekel's, which has been treated by Golovatch (in press)) will be examined here. Three new genera have been observed, two belonging to the suborder Chordeumidea and the third to the Craspedosomidea. Some material has been deposited in the Muséum National d'Histoire Naturelle de Paris (MNHN).

Suborder CHORDEUMIDEA

The existence of the suborder Chordeumidea (with the eighth pair of legs reduced and ninth gonopods), as distinct from Craspedosomidea (with the eighth pair of legs gonopods) (regrouping all the other Craspedosomids) is not acknowledged by contemporary authors. It is true that it is no longer possible to oppose Chordeumidea and Craspedosomidea in a Manichean fashion. The mode of sperm transfer and the respective role of the copulatory legs is not known in the base majority of cases and, concerning the relative degree of complexity of the eighth and ninth pairs of legs of males, examples of intermediate structures are numerous, even in the fauna of France, the country where this hypothesis of

Craspedosomid dualism originated (Brölemann 1935). I shall maintain this division here however, even if it has lost the dualistic character it originally possessed, since when only taken as a working hypothesis it emphasizes, in an obvious way, the homogeneity of the category constituted by the European Chordeumidae, the Asian Diplomaragnidae, the Indo-Australian Heterochordeumidae and Metopidiothricidae, and the American Conotylidae (among others). I find it hard to deny this homogeneity by reducing it to convergence, for it is based on a set of gonopodal characters, thus making it less vulnerable on this count than if it had been founded on aspects of external morphology.

The number of representatives of the Chordeumidea already known in the Indo-Australian zone, on the one hand by the genus *Schedotrigona* (New Zealand), and on the other by the genera *Heterochordeuma*, *Sumatreuma*, *Metopidiothrix* and *Malayothrix* (New Guinea and Indonesia), has been increased by three new genera, two of which are described below (*Reginaterreuma* of NE Queensland and *Neocambrisoma* of New South Wales). The third, *Australeuma* (from Tasmania) is described by Golovatch (in press). Furthermore, this author has noted the presence of the genus *Schedotrigona* in Tasmania. These findings, which fill in a large geographical gap, seem to establish a link between the forms already mentioned above, and so they are grouped together in the same superfamily Heterochordeumidea.

This new arrangement, that appears further in this text, marks an important change with respect to the system presented by Mauriès, 1978. Thus, the family Schedotrigonidae was placed in a distinct superfamily of the Diplomaragnoidea, with the family Diplomaragnidae.

The aim of this work is to review current knowledge about this superfamily as well as to describe new findings.

Superfamily HETEROCHORDEUMOIDEA (Pocock, 1894)

DIAGNOSIS

Chordeumidea (eighth pair: reduced peltogonopods; ninth pair: differentiated coxoprefemer and voluminous remains of telopodite) with tenth pair modified to store sperm and produce spermatophores (broad sternite, transformed tracheal sacs, reduced telopodites).

The other superfamilies of Chordeumidea can be broken down into two groups: one containing those in which the tenth pair of legs in males is not

modified (Diplomaragnoidea, Conotylloidea, Aerochordoidea) and the other in which not only the tenth pair, but also the eleventh and seventh pairs of legs in males are modified (Chordeumoidea).

KEY TO HETEROCHORDEUMOIDA FAMILIES
(Based on male sexual characters)

1. Tenth pair of legs, with reduced telopodites but with nearly unmodified sternites and coxites Heterochordeumidae (Pocock, 1894).
Tenth pair of legs, with highly modified coxites and sternites 2
2. No flagella on either the eighth or ninth pair Metopidiothricidae (Attems, 1907).
One pair of flagella on the caudal side of eighth pair of legs... Neocambrisomidae nov.
One pair of flagella at the base of ninth pair of legs (oral side)..... Schedotrigonidae Mauriès, 1978.

Fam. HETEROCHORDEUMIDAE (Pocock, 1894)

Our most recent information concerning this family is due to Hoffman (1963), who revised the types. The two genera *Heterochordeuma* Pocock, 1894 and *Sumatreuma* Hoffman, 1963 have very simple gonopodal structures. This aspect makes them undoubtedly the most archaic of all the Chordeumoidea, and even the placement of this family in the superfamily can be seriously questioned, since the tenth pair of legs in the male are far less specialized than in the following families.

Fam. METOPIDIOTHRICIDAE (Attems, 1907)

Known for six species separated into two poorly defined genera, *Metopidiothrix* Attems, 1907 and *Malayothrix* Verhoeff, 1929. This family had previously been found in Java, Sumatra, New Guinea, the Bismarek Archipelago (see bibliography in Mauriès, 1978) and Vietnam (Golovatch, pers. comm.). The new Australian genus described below obviously belongs to this family.

Reginaterreuma n.g.

DIAGNOSIS

Chordeumidea (eighth pair peltogonopods, ninth pair gonopods), Heterochordeumoidea (tenth pair paragonopods), Metopidiothricidae (no flagella on eighth or ninth pairs), differing from the other genera mainly in that its peltogonopods

(eighth pair of male) are reduced to a small unpaired sternal shield. On the gonopods (ninth pair), the coxal differentiations are at last bifid. Adults have 32 rings, preadults 30.

Of interest is the frequency (undoubtedly due to the favourable collecting time) of spermatophores both in males (on the tenth pair of legs) and in females. These spermatophores seem to have been made by coagulation in sacs attached to the tracheal tracts of the male tenth pair of legs. The walls of these sacs are membranous, but certain parts are sclerotized, which gives to each species a characteristic shape of spermatophore.

TYPE SPECIES

Reginaterreuma monroei n.sp.

ETYMOLOGY

Reginaterreuma, Latin for 'Queensland', and the suffix '*euma*', which has no particular meaning, but is frequently used in the suborder for the sake of uniformity with the oldest name *Chordeuma*.

Reginaterreuma monroei n.sp.

MATERIAL EXAMINED

HOLOTYPE: Australia, NE. Queensland, Mount Finlay (15°50'S/145°13'E), Nov.29-Dec.4, 1975, R. Monroe and V. Davies, 1♂ (QM S.1460)

PARATYPE: Same data as holotype, 1♀ (QM S.1461).

OTHER MATERIAL: Same area as types, Shiptons Flat (15°48'S/145°15'E), Nov.16-21, 1975, R. Monroe and V. Davies, 1♂ 1♀ 1 juvenile (QM S.1462). Same area, '12 miles Scrub', litter (15°50'S/145°19'E), 1♂ 1♀ juvenile (MNHN DB.33).

DESCRIPTION

Overall colour light brown, rather evenly speckled, ventrally lighter.

Head: convex head capsule, covered with short, fine setae; prominent mandibular stipes. Gnathochilarium: mentum and promentum.

Antennae with slightly clavate antennomeres, 0.8 mm long on the ♂ holotype (0.02 + 0.10 + 0.24 + 0.16 + 0.18 + 0.12 + 0.02 mm.); the length

of antennal 'club' (distal part, straight and clavate, of antenna, from the 5th antennomere on) is 6.5 times their width.

Eyes with few ocelli (9-13) arranged in five or six rows of 1-3 ocelli forming a small anteroposteriorly elongated, pigmented patch.

Collum in half circle, with 3+3 thick macrosetae arranged in a circular arc, equidistant from each other on either side, the innermost being located midway between the middle one and the middorsal groove.

Midbody rings: narrow middorsal groove; metatergal laterodorsal shoulders only slightly developed but very distinct, the posterior profile revealing two indentations inserted between the macrosetae; the latter (3+3) are long and thick, the outermost being longer than the middle one which is longer than the innermost; they are placed quite laterally, and each is equidistant from other on either side; but the distance between the innermost and the middorsal groove is three times that between it and the middle macrosetae; the three form a 160° angle.

Epiproct with a pair of dorsal macrosetae; the caudal side is almost straight and bears the usual pair of spinnerets; lateral posterior edge with two setae on each side.

Legs are slightly longer than the vertical diameter of the body (0.70 mm in the male holotype); 54 pairs in adults.

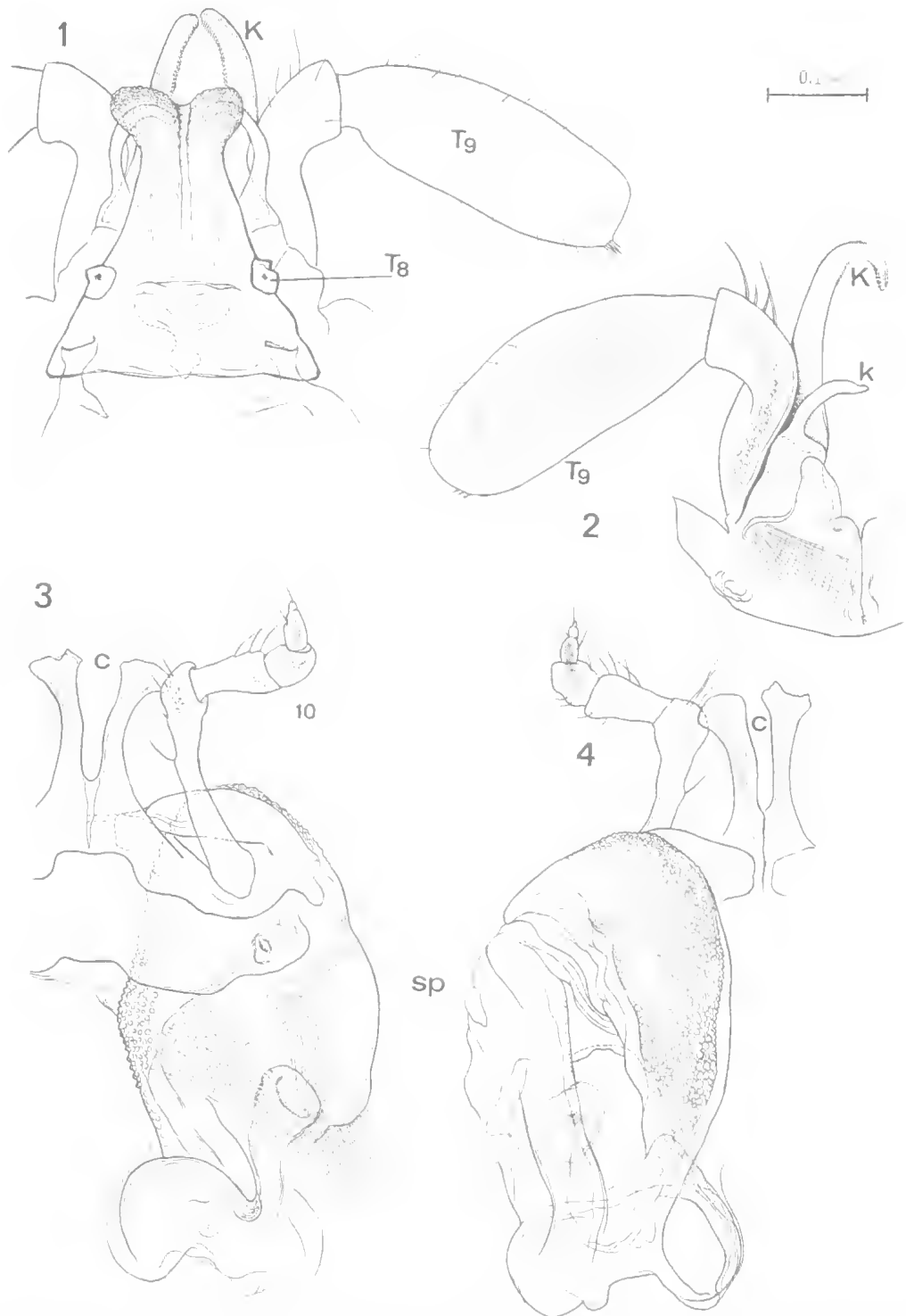
MALE SEXUAL CHARACTERS: Convex head. 44 pairs of legs posterior to the transformed legs. Nothing particular about first to seventh pairs (neither gibbosities nor processes) except that they are a bit sturdier than the other legs.

Eight pair (peltogonopods, Fig. 1) reduced to a simple unpaired shield of coxosternal origin; telopodites tiny stumps, no flagella.

Ninth pair (gonopods, Figs 1-2) like those characteristic of most Heterochordeumoidea, having a voluminous telopodite forming an incrassate oval, carried by a simple stalk (prefemur). They can be distinguished by the part

TABLE 1. *Reginaterreuma monroei*: Measurements (mm), number of rings (N) and ocelli.

	N	Length	Vertical diameter	Width	Collum width	Antenna length	Ocelli
Mt. Finlay ♂ holotype	32	7	0.60	0.80	0.45	0.80	11(1.2.3.3.2)
Mt. Finlay ♀ paratype	32	8	0.70	0.85	0.50	0.80	11(1.2.2.3.2.1)
Shiptons Flat ♂	32	7.5	0.65	0.85	0.50	0.85	12(1.2.3.2.3.1)
Shiptons Flat ♀	32	8.5	0.75	0.95	0.55	0.90	10(1.1.2.2.3.1)
12 mile Scrub ♂	32	9	0.70	0.85	0.50	0.90	13(1.2.3.3.2.2)
12 mile Scrub ♀	32	8.5	0.80	1	0.60	1	10(1.1.2.3.2.1)
12 mile Scrub ♂j.	30	5.7	0.60	0.70	0.35	0.75	9(1.2.3.2.1)



FIGS 1-4. *Reginaterreuma monroei* n.g., n.sp., ♂ holotype: 1. eighth pair (peltogonopods, in foreground) and ninth pair (gonopods), oral view; 2. isolated 9th left leg, oral view; 3. tenth pair, oral view, with spermatophore in place; 4. caudal view of the same.

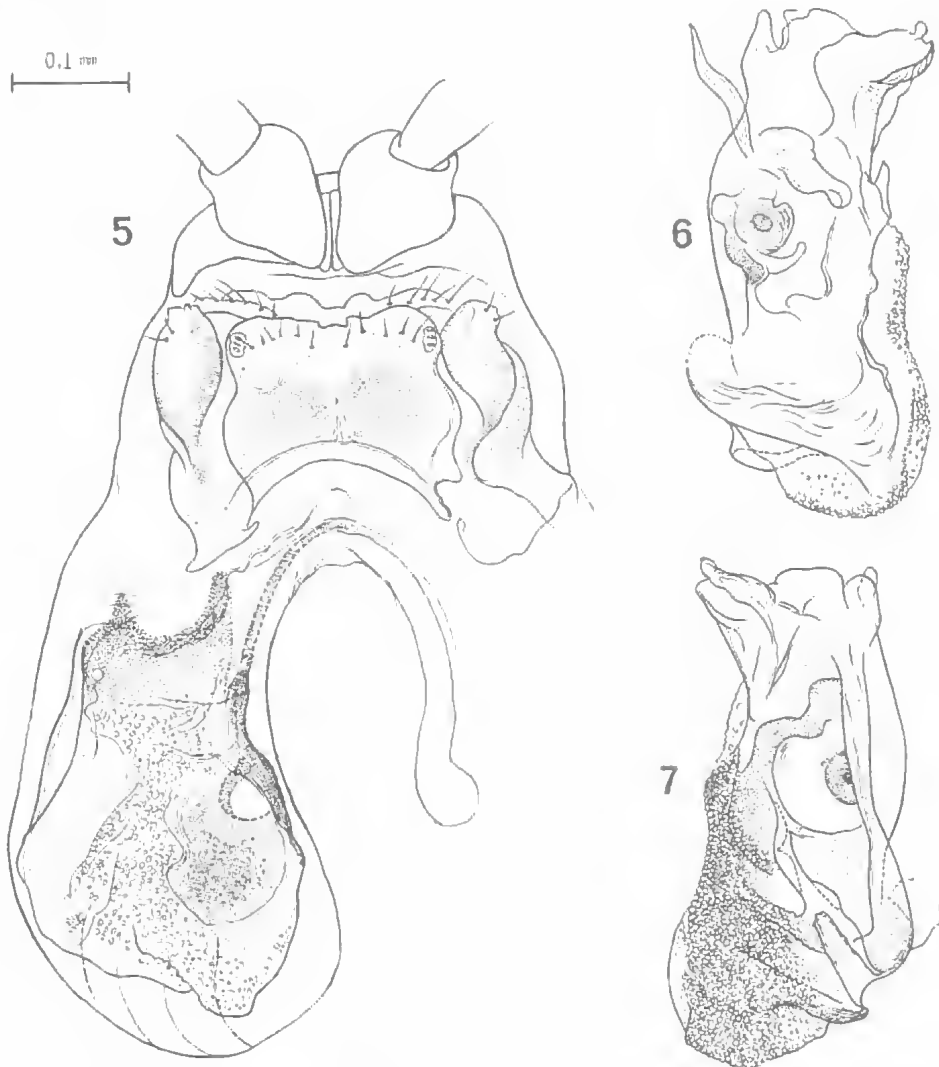
that is of coxal origin, which here is divided into two processes of unequal length; the anterior one (K) is long, with its extremity curving distad, and a posterior one (k) clearly much shorter.

Tenth pair (paragonopods, Figs 3-4) spindly four-jointed telopodites (T 10), bent between the first and second article and again between the third and fourth; the coxosternum forms mediad, a pair of horns fused at the base and diverging distally, as long as the first telopodite article. The tenth pair of legs are especially interesting because, on the caudal side, can be found a pair of ample and deep membranous sacs (sp), probably of tracheal

origin and having walls supported by a vague framework of thick sclerotized material. These pockets undoubtedly serve as a sperm receptacle and also produce a pair of spermatophores, each made of an agglomeration of coagulable substances and spermatids or spermatozooids.

Eleventh pair : no coxal glands nor any other special trait.

FEMALE SEXUAL CHARACTERS: The spermatophores mentioned above have also been found in female genital tracts. They have kept the shape they acquired in the receptacles on tenth pair of legs of the male (compare Figs 3 and 6). In the



FIGS 5-7. *Reginaterreuma monroei* n.g., n.sp., paratype: 5. base of second pair, vulvae, and spermatophores seen within the right receptacle; 6. isolated spermatophore, removed from its receptacle (mesal view); 7. the same external lateral view.

females, they have been observed placed posteriorly to the vulvae, on a level with the posterior edge of the fourth ring. Instead of being in a dilatation of the oviduct wall, they appear to be in a cul-de-sac opening between the sternite of second pair of legs and the vulvae (Fig. 5). The latter are characterized mainly by the internal valves being fused sagittally into a single posterior median unpaired plate.

ETYMOLOGY

This species is named after one of the collectors.

Reginaterreuma daviesae n.sp.

MATERIAL EXAMINED

HOLOTYPE: Australia, NE. Queensland, Mount Bartle Frere, NW. Centre Peak Ridge, rainforest (sieved litter), alt. 1400–1500 m., Oct. 7 and 8, 1981, Berlese No. 358, 1♂ (QM S.1464).

PARATYPES: QM S.1465, 2♀, same data as holotype. QM S.1466, 1♂, 2♀, same locality, Nov. 7 and 8, 1981.

DESCRIPTION

Overall colour brown, with lines of whitish spots: one laterodorsal pair of lines (on the prozonite at the macrosetae level) and one lateroventral pair. Especially the head but sometimes also the collum, epiproct and paraprocts are yellow-orange. Species larger than the precedent one.

Metatergal shoulders as in *R. monroei* but with macrosetae almost in a row. The latter are equidistant from each other and distance between the innermost and the middorsal groove is 2.6 times that between the setae.

MALE SEXUAL CHARACTERS: Third to seventh pairs of legs with telopodites barely thicker than the other legs, as in *R. monroei*, but here coxal processes are found, pronounced on fifth and sixth, insignificant on seventh pairs.

Eighth pair (peltogonopods, Fig. 9) shorter and narrower than in *R. monroei* with no trace of telopodital stumps, but with a wider base. The extremity, moderately bifid and bearing several

short setae, is enlarged subdistad by an anterior transversal crest (a).

Ninth pair (gonopods, Fig. 8) chiefly distinguished by the shape of the distal part of the large coxal process (K). Here, the bend followed by a seminal (?) groove, is ornamented on the exterior (therefore distad) by a languet (g). The small coxal process (k) has a mushroom-shaped extremity.

Tenth pair (paragonopods, Figs 10–11) as in *R. monroei* but with a very elongated prefemur and the stumpy telopodal remains. Spermatophore receptacles much shorter than in *R. monroei*.

Eleventh-thirteenth pairs of legs with ventral extensions on coxites, slight on eleventh pair, fairly long and wide on twelfth, fairly long and narrow on thirteenth.

FEMALE SEXUAL CHARACTERS: Vulvae (Fig. 13) fairly similar to those in *R. monroei* but with a broader unpaired median posterior plate formed by the fusion of the internal valves of each vulva. Here the coxites of the second pair of legs have slight dorsointernal extensions. Fig. 14 shows a spermatophore taken from the genital tract of a female: it differs from those observed in *R. monroei* in its general shape and the smaller surface of the granular zone where the sexual cells seem to be concentrated (compare with Fig. 3 and 6).

ETYMOLOGY

Species cordially dedicated to Valerie Davies, past Curator of Arachnids at the Queensland Museum.

Reginaterreuma unicolor n.sp.

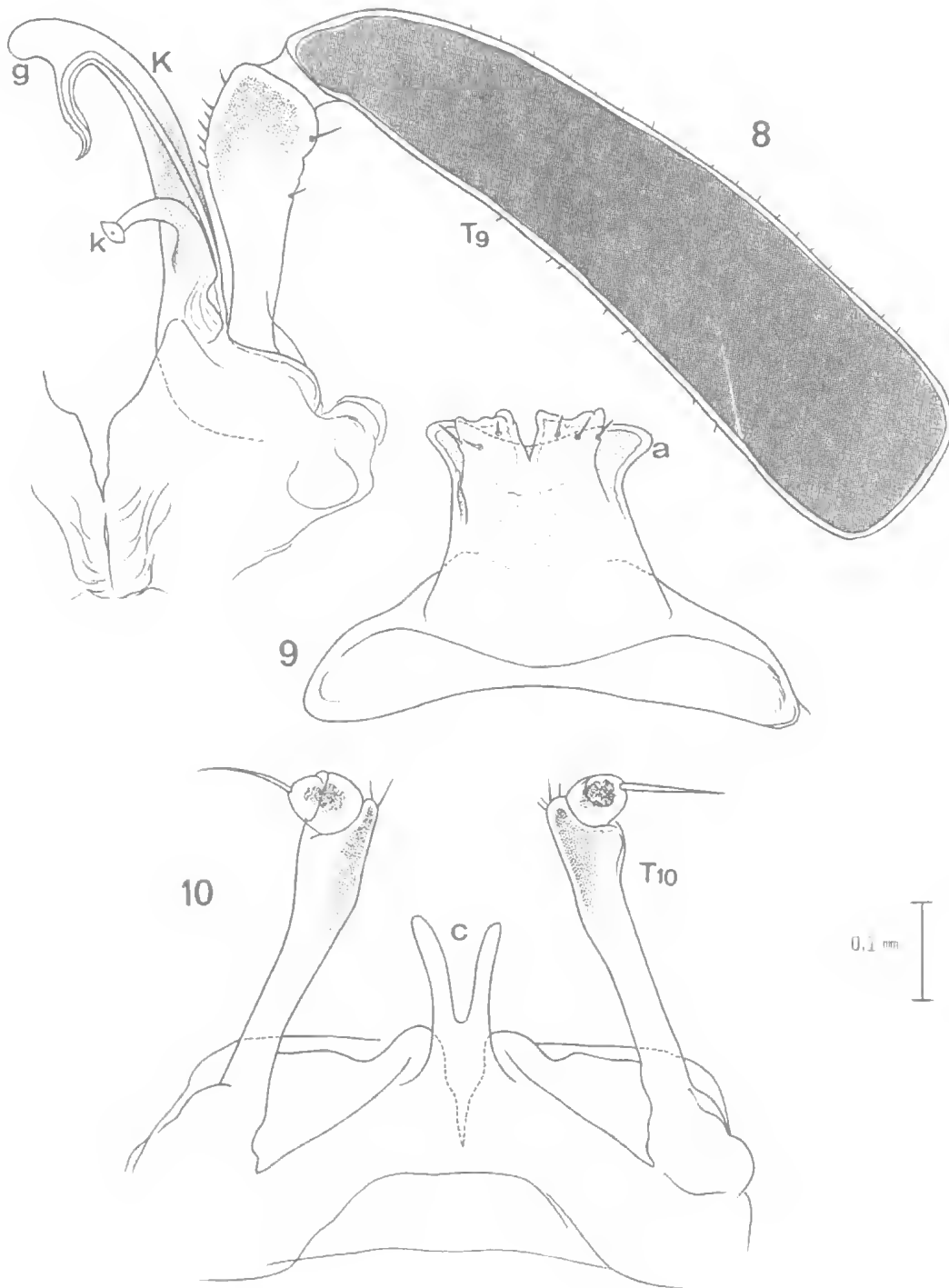
MATERIAL EXAMINED

HOLOTYPE: Australia, NE. Queensland, Bellenden Ker Range, Westgid Creek (North Branch), alt. 100 m., Berlese No. 351 (sieved litter), Nov. 1, 1981, 1♂ (QM S.1467)

PARATYPES: Same data as holotype, 1♂ 2♀ 3♂j. (QM S.1468), 1♂ 1♀ paratypes (MNH DB 33). Same locality, same data, 1♂j., 1♀ (QM S.1470), Berlese No. 353.

TABLE 2. *Reginaterreuma daviesae*: Measurements (mm), number of rings (N) and ocelli.

	N	Length	Vertical diameter	Width	Ocelli
♂ holotype	32	8	1	1.2	18(1.2.3.4.4.4)
♂ paratype	32	9	0.8	1	18(1.2.3.4.4.4)
♀ paratype	32	10	1.2	1.4	19(2.3.4.5.5)
♀ paratype	32	10.5	1.2	1.4	22(1.2.3.3.4.4.5)
♂ paratype	32	10.5	1	1.2	19(1.2.3.4.4.5)
♀ paratype	32	11.5	1.1	1.4	19(1.2.3.4.5.4)



FIGS 8-10. *Reginaterreuma daviesae* n.g., n.sp., ♂ holotype: 8. isolated ninth left leg, oral view; 9. eighth pair, caudal view; 10. tenth pair, oral view (telopodites and sternite).

OTHER MATERIAL: Same area, Bellenden Ker Range, Cableway Base Station, alt. 100 m., Oct. 17-24, 1981, 2♂ 2♀ (QM S.1471). Same locality, Berlese No. 306, 1♂ 2j. (QM S.1472). Same area, Hilltop 5.5 km north of Mount Lewis, alt. 1200 m., Berlese No. 299, Sept. 13, 1981, G. Monteith and D. Cook, 1♂ (QM S.1473).

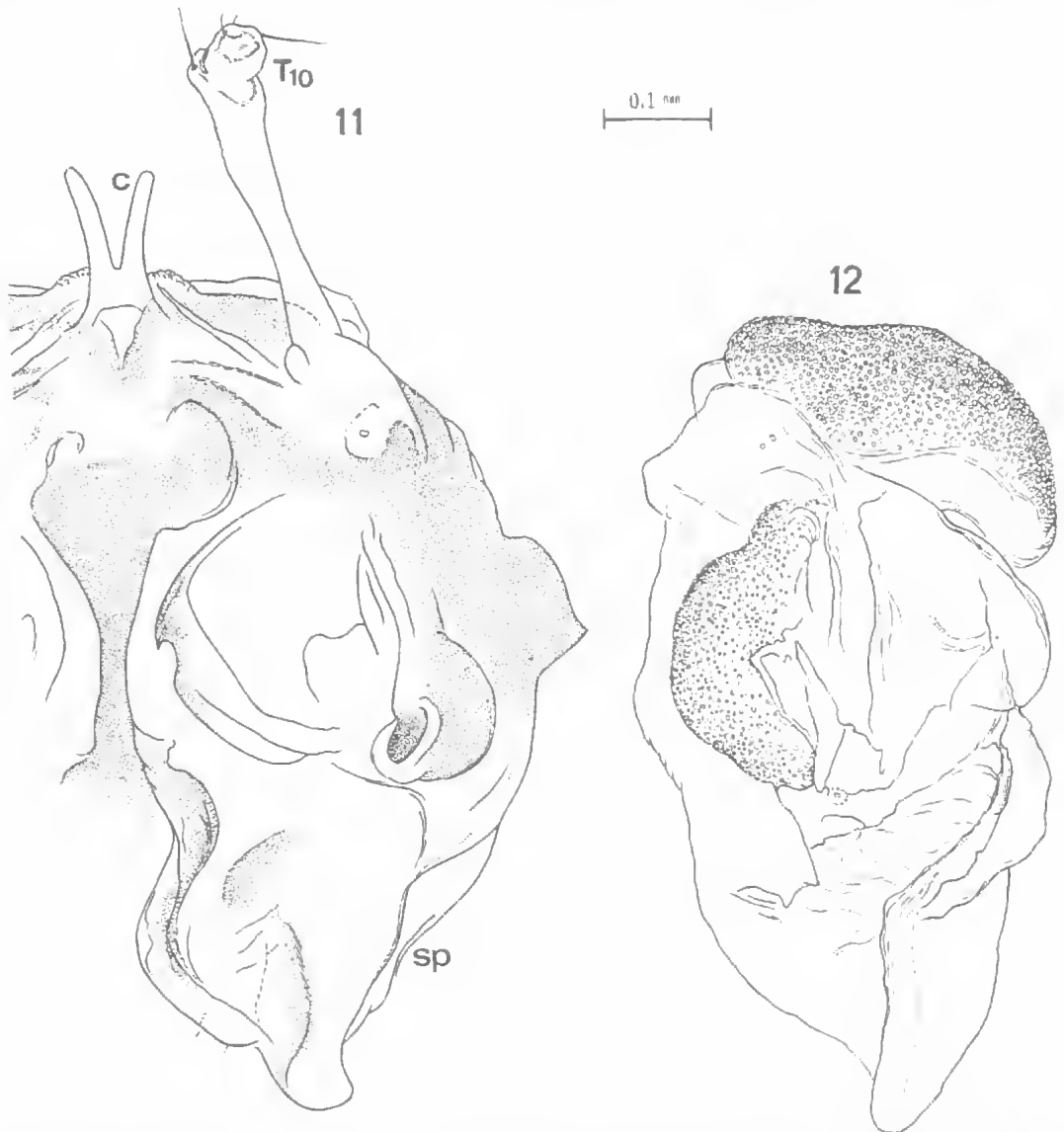
DESCRIPTION

A more or less mottled brownish color all over, often with lighter laterodorsal and lateroventral spots as in *R. daviesae*, but here the head, epiprocts and paraprocts are brown.

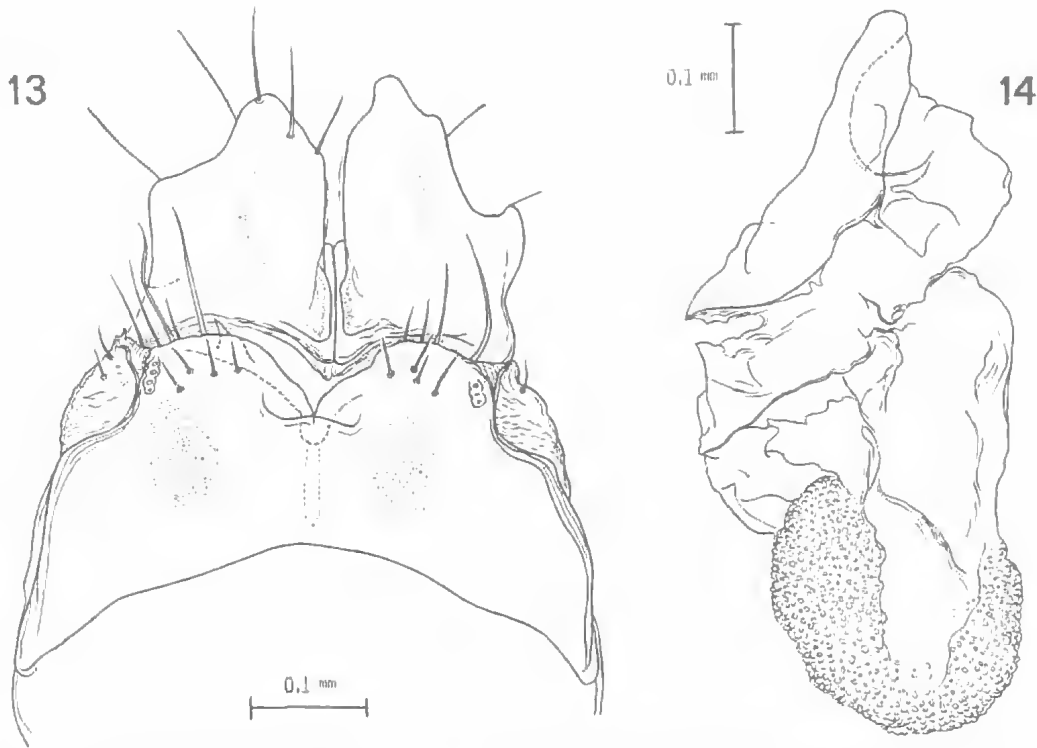
The two young females collected (Berlese No. 306) have 15 rings 16 legpairs and 3(1,2) ocelli.

MALE SEXUAL CHARACTERS: First-seventh pairs of legs have no modifications, not even in the coxites.

Eight pair (peltogonopods, Fig. 15) platelike, very similar to those of *R. daviesae*; anterior concavity bordered distad by two short divergent arms (a = homologous to the transversal crest of *R. monroei*); the extremity forms two elongated parasagittal lobes that fit in between the prefemurs of the ninth pair (gonopods).



FIGS 11-12. *Reginaterreuma daviesae* n.g., n.sp., ♂ holotype: 11. tenth pair with spermatophore (right side) in place in sac, oral view; 12. spermatophore removed from sac on the tenth pair, seen from internal side.



Figs 13-14. *Reginaterreuma daviesae* n.g., n.sp., - paratype: 13. base of second pair and vulvae, caudal view; 14. spermatophore removed from extravulvar receptacle, seen from internal side.

TABLE 3. *Reginaterreuma unicolor*: Measurements (mm), number of rings (N) and ocelli.

	N	Length	Vertical diameter	Width	Ocelli
Loc. tip. ♂ holotype	32	10	0.80	1.10	17(1.2.3.4.4.3)
♂ paratype	32	7.5	0.80	1.10	16(1.2.3.4.3.3)
♂ paratype	32	7	0.70	0.95	14(1.2.3.4.3.1)
paratype	32	9	1	1.30	17(1.2.3.3.4.4)
paratype	32	10.3	1	1.30	17(1.2.3.4.4.3)
paratype	32	9	0.80	1.10	17(1.2.3.4.4.3)
♂ j. paratype	30	7	0.70	0.95	14(1.2.3.4.4)
♂ j. paratype	30	7	0.75	1	14(1.2.3.4.4)
Berl. 353 ♂ j. paratype	30	5.5	0.70	0.85	12(1.2.3.3.2.1)

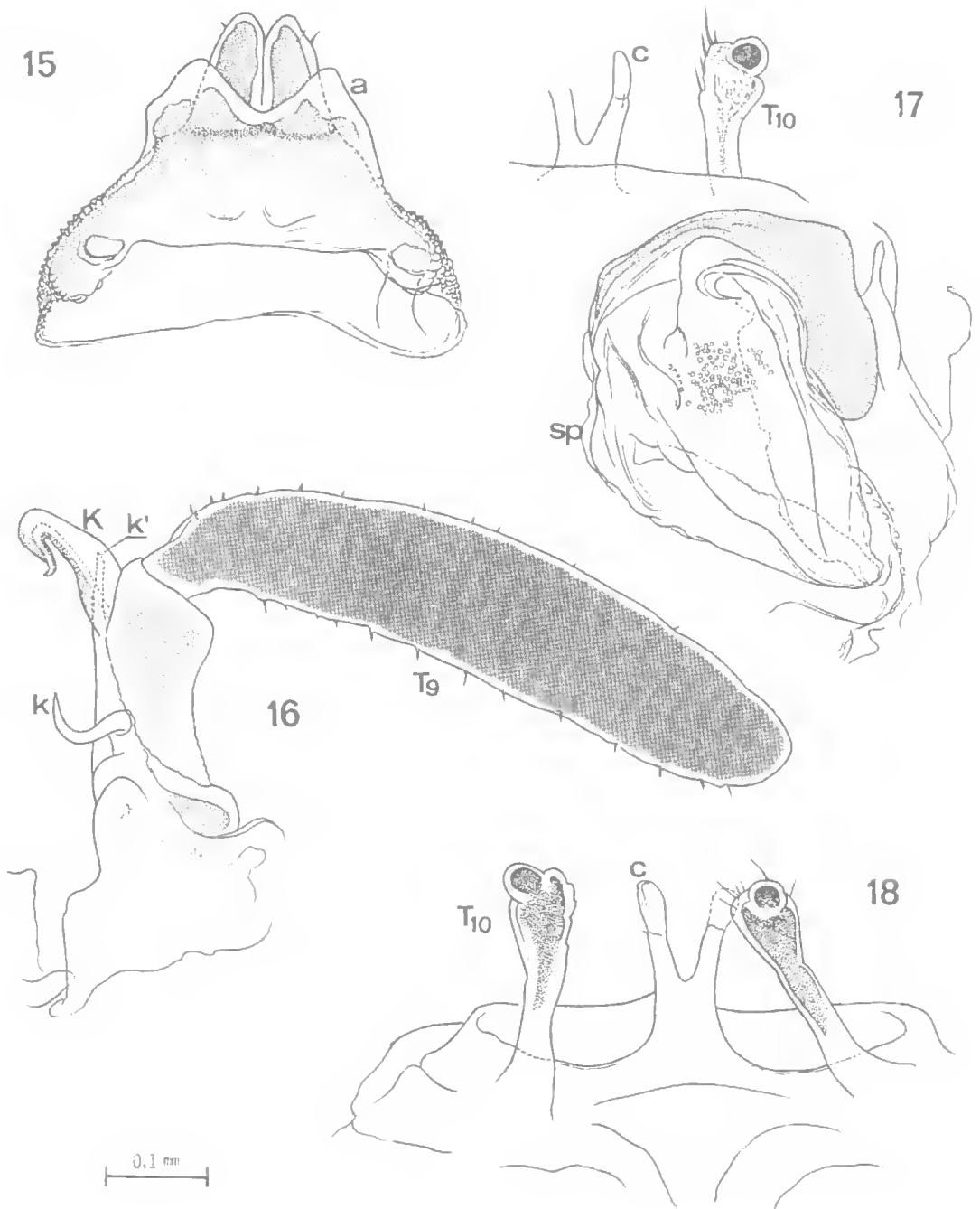
Ninth pair (gonopods, Fig. 16): distal segment of the telopodite longer than in *R. monroei*. The coxal process (K) bears an accessory branch (k') on its posterior side.

Tenth pair (paragonopods, Figs 17-18) with telopodites reduced to a slender prefemur (which is slightly clavate distad) bearing a vestigial bud on its extremity. Coxal horns of slight length. No spermatophore has been observed in this species.

Eleventh pair: coxites without coxal sacs and with a distal projection covered with a tuft of long,

thick hairs. The coxites of the more posterior legs have large, straight, unprotruding distal edges.

PRE-ADULT MALE CHARACTERS: Figs 19-21 represent the eighth, ninth and tenth pairs of legs of the only preadult male collected. He has 30 rings and 48 leg pairs. The eighth pair is practically reduced to sternites; on the ninth, the coxites show no differentiation; on the tenth, the future adult paramedian horns appear like small internal coxal laminae (k).



FIGS 15-18. *Reginaterreuma unicolor* n.g., n.sp., ♂ holotype: 15. isolated eighth pair, oral view; 16. ninth right leg, oral view; 17. 10th pair and spermatophore, caudal view; 18. tenth pair, oral view.

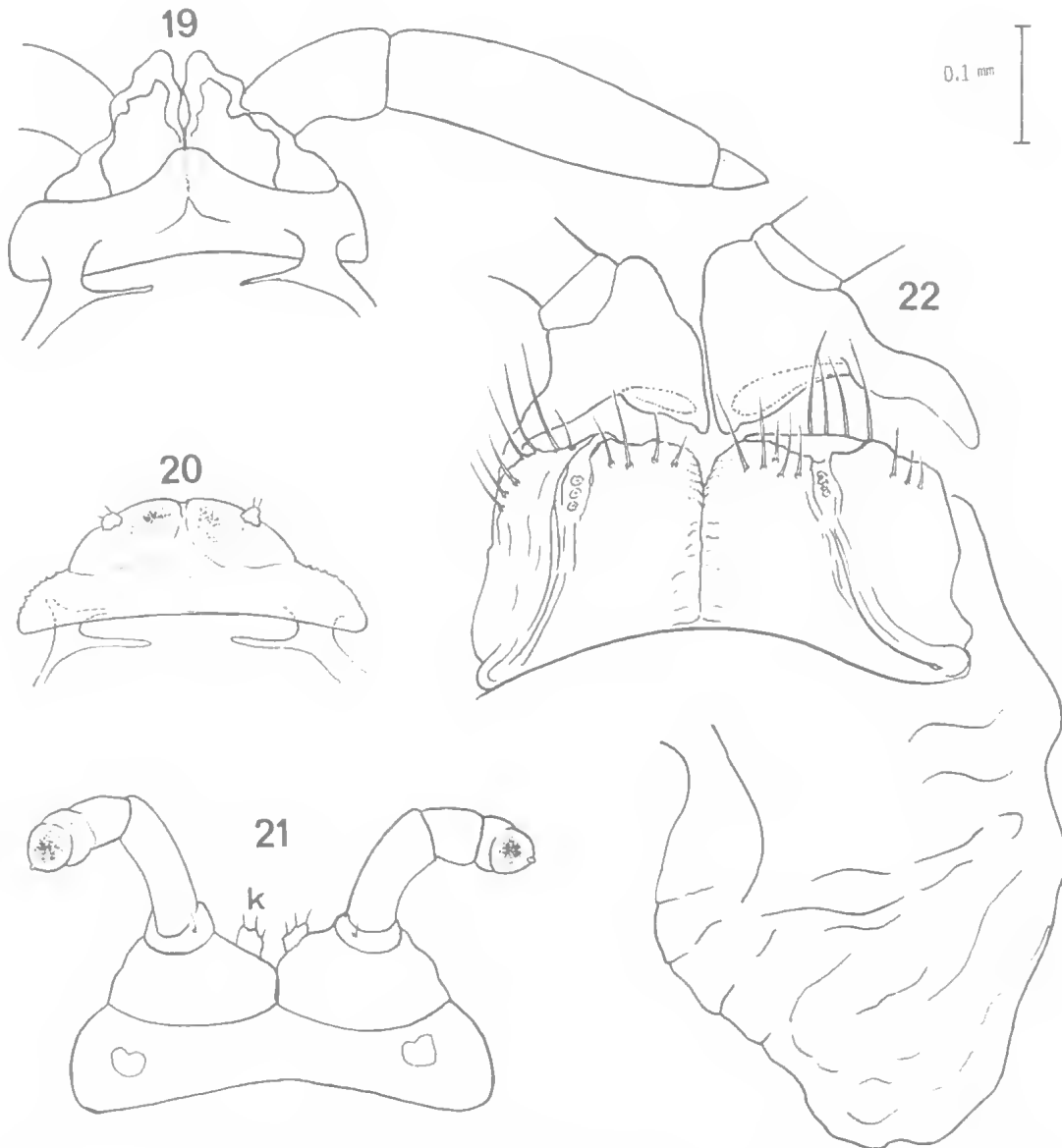
FEMALE SEXUAL CHARACTERS: Vulvae (Fig. 22) closely resemble those of the other species; but the sagittal welding of the internal valves is less obvious and the median posterior plate is narrower than that of *R. daviesae*, although the coxites of the second pair are similar to those of the latter species.

***Reginaterreuma major* n.sp.**

MATERIAL EXAMINED

HOLOTYPE: Australia, NE. Queensland, Bellenden Ker Range, summit, TV Station, alt. 1560 m., Oct. 23–31, 1981. 1♂ (QM S.1474).

PARATYPES: Same data as holotype, 2♀ 10♂ (QM S.1475), 1♂ 1♀ (MNHN, DB 33). Same locality,



FIGS 19–22. *Reginaterreuma unicolor* n.g., n.sp., preadult ♂ and ♀ paratype: 19. ninth pair of preadult ♂; 20. eighth pair of the same; 21. tenth pair of the same; 22. base of second pair, vulvae (oral view) and right receptacle of a female paratype.

rainforest, sieved litter, Nov. 1-7, 1981, Berlese No. 338, 2♂ 2♀ 1j. (QM S.1476). Same loc., same date, Berlese No. 335 (QM S.1477) 1♀. Same loc., same date, rainforest, stick brushings, Berlese No. 342, 1♀ (QM S.1478).

DESCRIPTION

As shown by the measurements (Table 4) this species is the largest of the four. Both its habitus and colouration are similar to those of the others. It is brownish, darker than the other species, with clearly distinct whitish lateroventral and laterodorsal stripes; the head is orange-yellow, like that of *R. daviesae*, but the epiproct is brown and the paraproct white.

The position of macrosetae and the shape of the metatergal shoulders are like those of *daviesae*.

MALE SEXUAL CHARACTERS: Third-seventh pairs are a bit sturdier than the other leg pairs.

Eighth pair (peltogonopods, Fig. 23), resemble those of *monroei*, but are different in that they have a transverse ridge located just above the middle oral side (a). This ridge is also found in *R. daviesae* and *R. unicolor*, but its position and shape are different.

Ninth pairs (gonopods, Fig. 23) almost identical to those of *monroei*. There is only a difference in the shape of the short posterior coxal branch (k), whose distal half narrows sharply.

Tenth pair (paragonopods, Figs 24-25) with four-segmented weak telopodites, the first segment of which is longer than the other three. Slender paramedian coxosternal horns. Wide spermatophore receptacle sacs like those in *R. daviesae*.

Eleventh-thirteenth pairs as in *R. unicolor*.

FEMALE SEXUAL CHARACTERS: In their general appearance, the vulvae (Fig. 26) are very similar

to those in *unicolor*, but here there is not visible trace of the sagittal welding of the unpaired plate (formed by the union of both internal valves). Worth noting is the existence, under the cul-de-sac formed by the receptacle, of a glandular formation (g) that seems to be connected to the tracheal sacs of the second pair of legs by means of a sinuous groove on the oral side. Fig. 27 shows the spermatophore taken from the left side (exactly the same one that is seen in Fig. 26; here it is presented medially).

Fam. NEOCAMBRISOMIDAE NOV.

DIAGNOSIS

Chordeumidea (eighth pair : peltogonopods, ninth pair gonopods), Heterochordeumoidea (tenth pair paragonopods) characterized by the presence of a pair of long flagella set on the caudal side of the base of the peltogonopods.

TYPE-GENUS

Neocambrisoma n.g.

KEY TO GENERA

Eighth pair (peltogonopods) marked medially by a thick unpaired process. Metazonites with smooth teguments *Neocambrisoma* n.g.

Eighth pair (peltogonopods) medially lacking an unpaired process. Metazonites with rough teguments *Australeuma* Golovatch (in press).

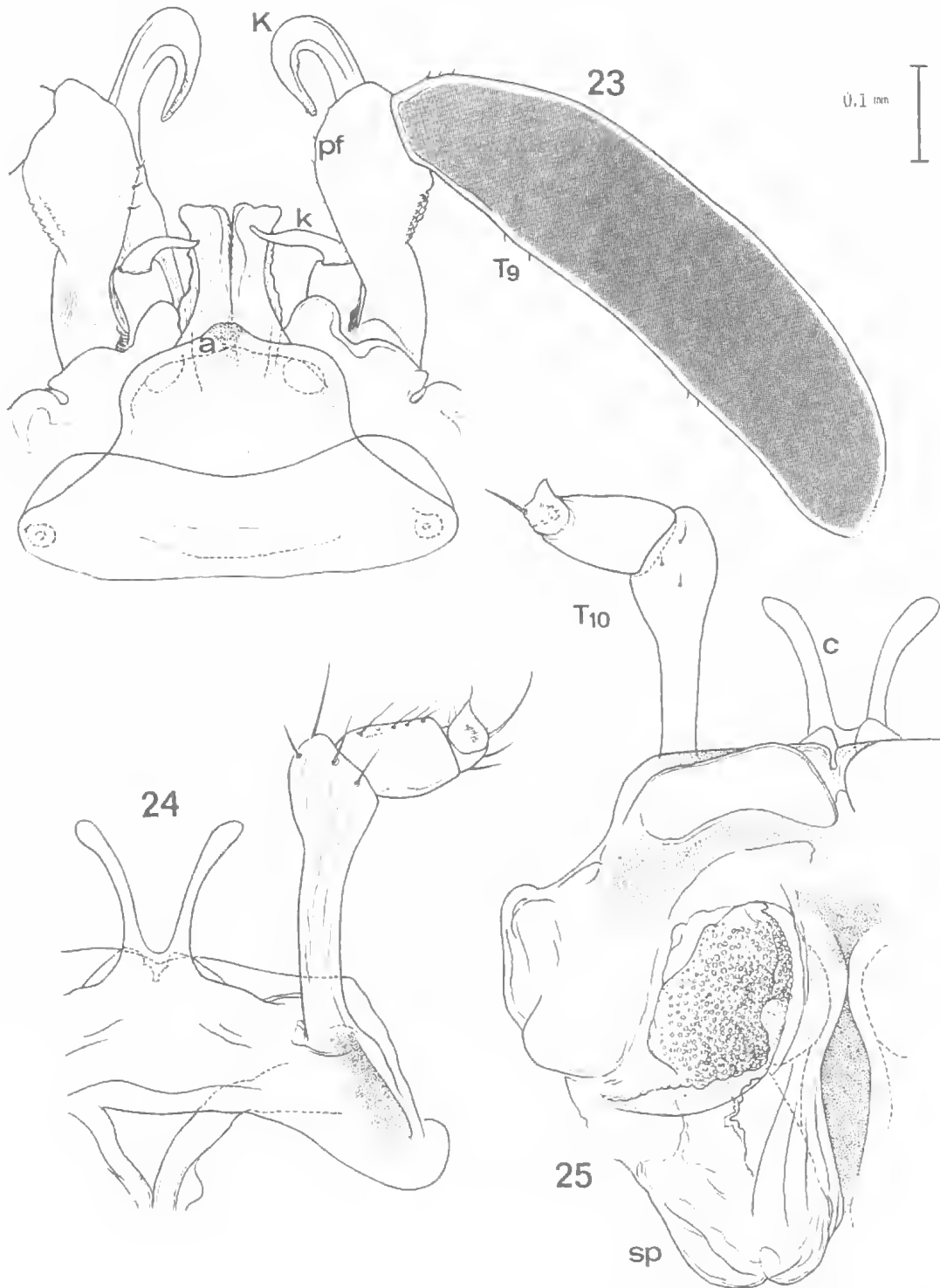
Neocambrisoma n.g.

DIAGNOSIS

Heterochordeumoidea, Neocambrisomidae with the eighth pair of legs (peltogonopods) having

TABLE 4. *Reginaterreuma major*: Measurements (mm), number of rings (N) and ocelli.

	N	Length	Vertical diameter	Width	Ocelli
♂ holotype	32	13	0.9	1.3	17(1.2.3.4.4.3)
♂ paratype	32	11	0.8	-	16(1.2.2.3.4.4)
♂ paratype	32	9.5	0.8	-	19(1.2.3.4.5.4)
♂ paratype	32	11	1	1.25	19(1.2.3.4.5.4)
♀ paratype	32	14	1.1	1.5	19(1.2.3.4.5.4)
♀ paratype	32	13.5	1.2	-	17(1.2.3.4.4.3)
♀ paratype	32	10.5	1.1	-	18(1.2.3.4.4.4)
♀ paratype	32	11	1.2	-	18(1.2.3.4.4.4)
♀ paratype	32	?	1.1	-	15(1.2.3.3.3.3)
♀ paratype	32	13	1.1	-	19(1.2.3.4.5.4)
♀ paratype	32	13.5	1.1	-	18(1.2.3.4.4.4)
♀ paratype	32	12	1.1	1.5	17(1.2.3.4.3.2.2)
♀ paratype	32	14	1.2	-	17(1.2.3.4.4.3)
♀ paratype	32	11	1.2	-	18(1.2.3.4.4.4)



FIGS 23-25. *Reginaterreuma major* n.g., n.sp., ♂ holotype: 23. eighth and ninth pairs, oral view; 24. tenth pair, oral view; 25. tenth pair, with right spermatophore, caudal view.

sturdy flagella and a pronounced unpaired median projection. The ninth pair of legs (gonopods) with coxal process forming a rectangular lamina. The 10th pair with telopodites that are extended but have only two to four segments (stumps in *Australeuma*). Smooth metazonites, with 3+3 thick macrosetae. 32 rings in both sexes.

TYPE-SPECIES

Neocambrisoma raveni n.sp.

ETYMOLOGY

Neocambria, Latin for New Wales, and the Greek latinized suffix *soma* : body.

Neocambrisoma raveni n.sp.

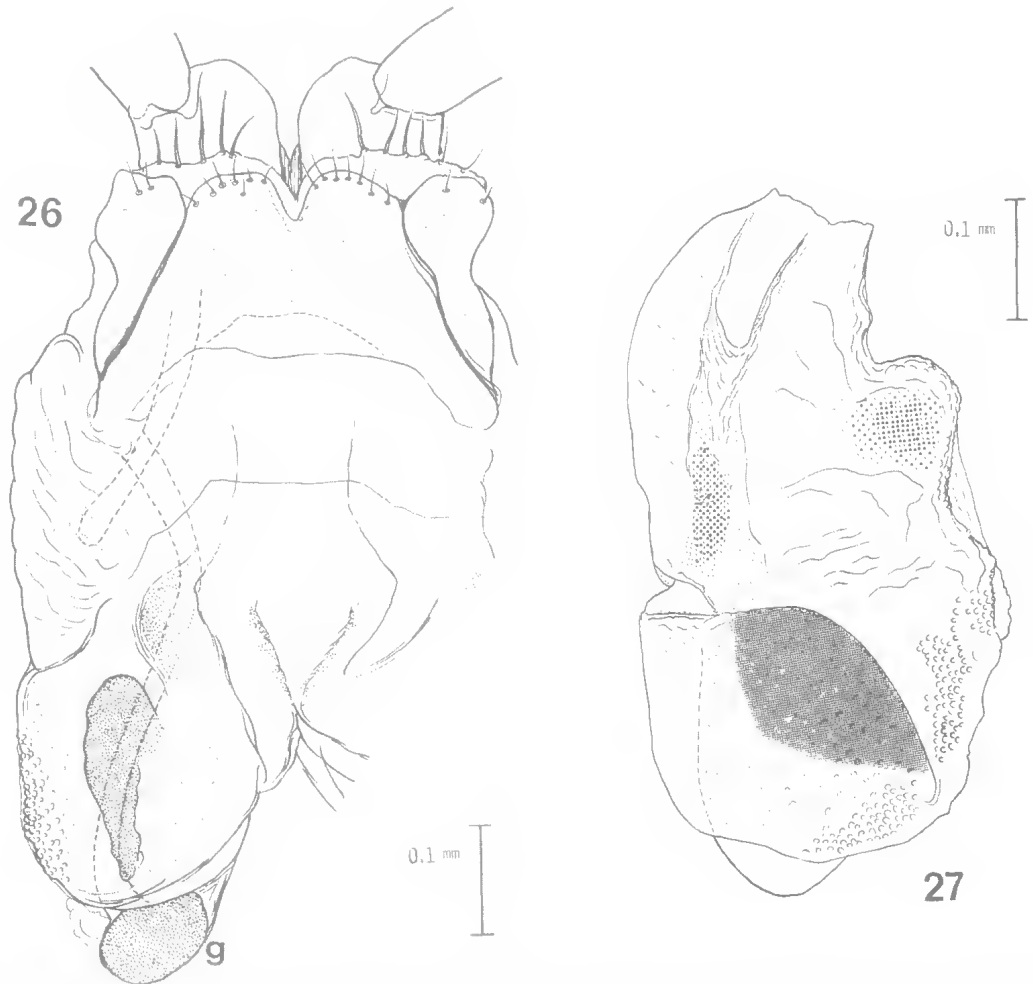
MATERIAL EXAMINED

HOLOTYPE: Australia, New South Wales, Coffs Harbour, Bruxner Forest Park, Nov. 12, 1980, R.J. Raven, 1♂ (QM S.1479).

PARATYPES: Same data as holotype, 3♂ 1♂j. 8♀ 1j. (QM S.1480); 1♂ 1♀ 1♂j. (MNHN DB 33).

DESCRIPTION

Colour: dark brown middorsal stripe between two lighter, narrow laterodorsal stripes, brown on the metazonites, whitish on the prozonites. The ventral part of the flanks is light brown on the prozonites, whitish on the metazonites. Legs are



FIGS 26-27. *Reginaterreuma major* n.g., n.sp., ♂ paratype: 26. base of second pair, vulvae (oral view) and right receptacle with spermatophore; 27. spermatophore removed from receptacle, mesal view.

light brown, growing darker distad. Epiproct is entirely dark brown (paraprocts are lighter). Head capsule and cheeks are light brown, clypeolabrum is whitish, with a yellow patch between the antennae.

Convex head capsule, densely covered with short, fine setae; prominent mandibular stipes; trident labrum; gnathochilarium (Fig. 36) with trapezoidal mentum separated from the stipes by a small triangular area. Antennae whose antennomeres, especially the most distal ones, are slightly clavate and measure 1.2 mm on the male holotype (0.05 + 0.18 + 0.30 + 0.20 + 0.27 + 0.17 + 0.13 mm) and 1.4 mm on the largest female. The length of the antennal 'club' is 5.5 times its width.

Eyes: few ocelli (14–17 in adults), arranged in an anteroposteriorly extended pigmented field, in six or seven (rarely eight) transversal rows of one to four ocelli (see above table).

Collum in a half circle with rounded angles; the 3+3 macrosetae are equidistant from each other on each side and the innermost is located exactly between the middle one and the middorsal groove.

Midbody rings: narrow, distinct middorsal groove; metatergal shoulders in a laterodorsal position, nearly forming keels and bearing three long macrosetae (0.3 mm on the male holotype), that are thick and curved slightly backwards. They are placed in a transverse line on the posterior rings but form an open angle (about 150°) on the midbody ones; on each side, they are nearly equidistant from each other and the distance separating them is half that between the innermost and the middorsal groove.

Epiproct as in *Reginaterreuma*.

The length of the legs equals the width of the body (1.1 mm in the ♂ holotype); the adult has 54 pairs (the thirtieth ring is hemiapodous, i.e. has only one pair of legs).

ADULT MALE SEXUAL CHARACTERS: Sixth and seventh pairs thicker than the others pairs. Deformed tarsus and prefemur (Fig. 28).

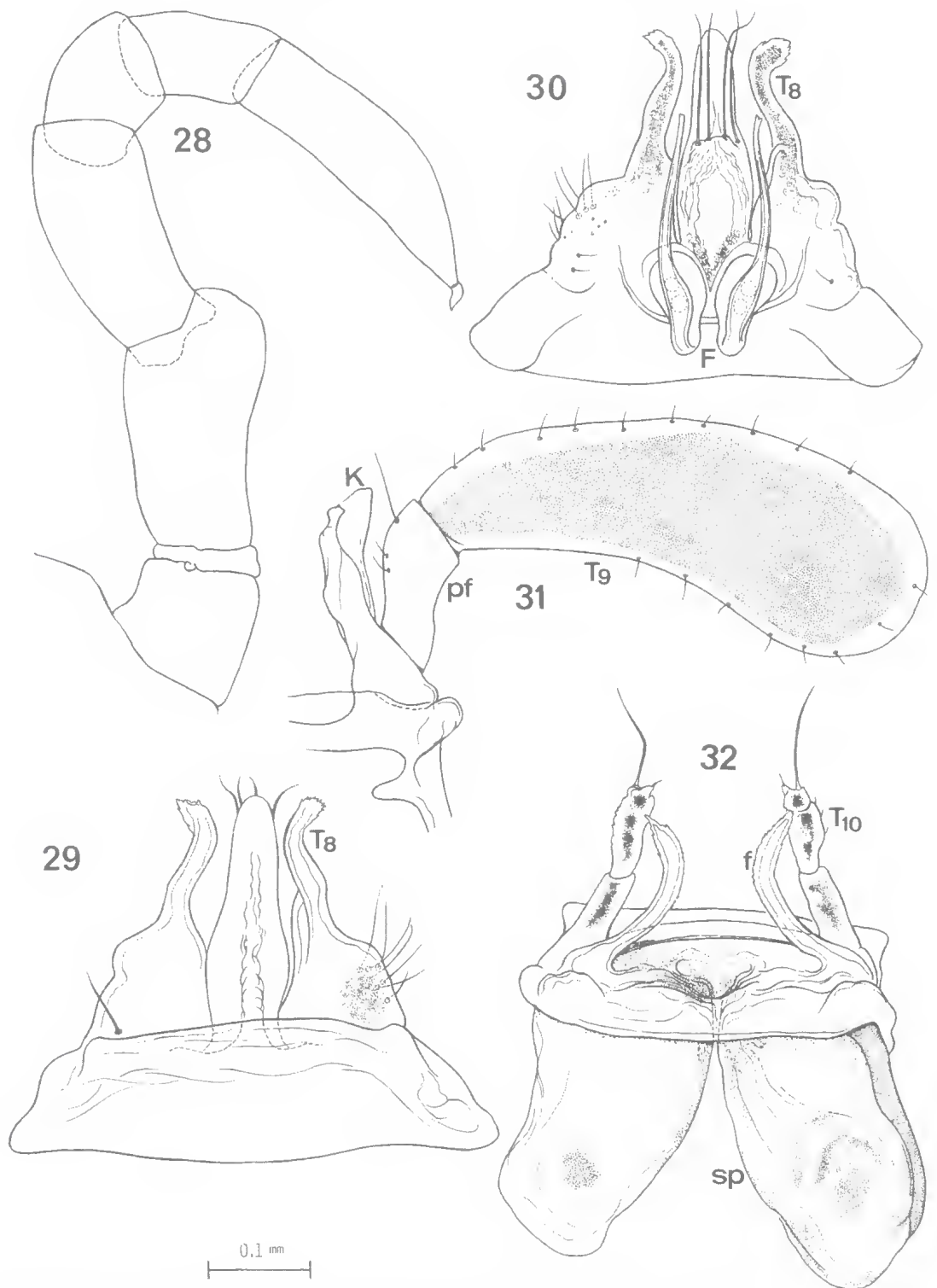
Eighth pair (peltogonopods, Figs 29–30) reduced to a sternite projected by a large unpaired median process surrounded by two vestigial telopodites (T8), but noteworthy mainly for the existence of a pair of sturdy flagella (F) on the caudal side of its sternal band. Among millipedes, flagella, similar in structure and also located on the caudal side of the eighth pair, are frequent in Iulids and Blaniulids, and exist in Cambalids, certain Craspedosomids and, in Chordeumids only in the genus *Lankasoma*.

Ninth pair (gonopods, Fig. 3) characteristic of those found in many Chordeumidea, in particular because their telopodite (T9) forms an incrassate, elongated mass attached to a simple prefemoral stem (pf). The coxal process (K) appears as a simple subrectangular lamina with its internal edge slightly thickened and without any trace of a groove or furrow as in *Reginaterreuma*.

Tenth pair (paragonopods, Fig. 32) with reduced, three-segmented telopodites (T10), each flanked on its oral side by a slightly shorter falciform process (f); two enormous sacs (sp) are invaginated in the sternite (wide rectangular band); these sacs are surrounded and supported by tracheal tracts, and as in *Reginaterreuma*, they

TABLE 5. *Neocambrisoma raveni*: Measurements (mm), number of rings (N) and ocelli.

	N	Length	Vertical diameter	Width	Ocelli
♂ holotype	32	12	0.85	1.1	17(1.2.3.3.3.2.2.1)
♂ paratype	32	13.5	0.80	-	15(1.3.3.2.3.3)
♂ paratype	32	11.5	0.80	-	14(2.2.2.3.3.2)
♂ paratype	32	10.5	0.90	-	15(1.2.3.3.3.3)
♂ paratype	32	10.8	0.80	-	17(1.3.3.3.3.4)
♂ j. paratype	30	9.5	0.75	-	12(1.2.2.2.2.3)
♂ j. paratype	30	9	0.75	0.95	12(1.2.3.2.2.2)
paratype	32	11	0.90	1.20	16(1.2.3.3.3.2.2)
paratype	32	11.5	0.95	1.40	16(1.2.3.3.3.2.2)
paratype	32	11	1	-	15(1.2.3.3.3.2.1)
paratype	32	11.7	0.80	-	15(1.2.3.3.3.2.1)
paratype	32	11.7	0.80	-	14(2.3.3.3.3)
paratype	32	10.8	0.90	-	16(1.2.1.3.3.3.3)
paratype	32	9.7	0.75	-	15(1.2.2.2.3.3.2)
paratype	32	11.5	0.70	-	15(1.2.3.3.3.3)
paratype	32	10.5	0.95	-	15(1.2.3.3.3.3)
j. paratype	30	8	0.70	-	13(1.2.2.2.3.3)



FIGS 28-32. *Neocambrisoma raveni* n.g., n.sp., ♂ holotype: 28. telopodite and coxite of 7th pair; 29. 8th pair, oral view; 30. same, caudal view; 31. ninth right leg, oral view; 32. tenth pair, oral view.

obviously play a part in sperm storage prior to spermatophore production.

PRE-ADULT MALE SEXUAL CHARACTERS: The young males with 30 rings have 48 leg pairs (38 pairs posterior to the paragonopods). They therefore have 3 apodous rings (including the epiproct) and one hemiapodous ring.

Eighth pair (Fig. 34) reduced to a low crescent-shaped band on which can be found buds of coxal origin (f) that will grow into the adult's flagella. Telopodite traces (t) can be recognized by the pigmentary spots, each with a tuft of setae.

Ninth pair (Fig. 33) already showing adult structure, except that the last segment of the telopodite, is less voluminous and the prefemur is shorter and sturdier. The coxite is split longitudinally along the caudal side.

Tenth pair (Fig. 35) with an unmodified sternite, coxites without coxal glands and telopodites reduced to six segments, the three most distal being clearly regressive.

FEMALE SEXUAL CHARACTERS: Fig. 37 shows the vulvae, which have no special characteristics. Extra-vulvar structures similar to those found in *Reginaterreuma* females have not been observed here.

ETYMOLOGY

Species cordially dedicated to its collector, the Curator of Arachnology at the Queensland Museum, Robert J. Raven.

Neocambrisoma sp.

MATERIAL EXAMINED

Australia, SE. Queensland, Mount Glorious; litter, Oct. 28, 1970, H. Williams, 1 ♂ juv. (QM); same area, Nov. 18, 1970, H.W., 1 ♂ (QM).

REMARKS

In all probability a new species, that will be described when the adult male is discovered.

Fam. SCHEDOTRIGONIDAE Mauriès, 1978

This monogeneric family was previously known only in New Zealand (cf. Mauriès, 1978). A new species *Schedotrigona tasmanica* Golovatch (in press) has been discovered by Jeekel in Tasmania.

Suborder CRASPEDOSOMIDEA

The Craspedosomidea are known in the temperate and certain subtropical zones of the Northern Hemisphere, but have not been previously recorded in the Southern Hemisphere. The closest records to Australia are from southern India (*Pygmeosoma*) and Japan

(*Macrochaeteuma*). It was therefore a great surprise for the author to discover a Craspedosomid in material collected from the mountains south of Cairns (Bellenden Ker Range, Bartle Frere) by Professor Peter M. Johns. It seems confined to this area and is without doubt a new genus, *Peterjohnsia*, very warmly dedicated to its discoverer.

This new genus is easily placed in the superfamily Cleidogonoidea (a large group of both Palearctic and Nearctic families) whose diagnosis and contents are still far from fixed and agreed on by the specialists (see Shear 1979; Hoffman 1979; Mauriès 1982; Mauriès & Geoffroy 1983). In light of these difficulties and on the basis, taken arbitrarily, of Shear's diagnosis of the superfamily (1979) and those of Mauriès for the family (1981), a new family was created for the new genus *Peterjohnsia*.

Superfamily CLEIDOGONOIDEA (Cook, 1896)

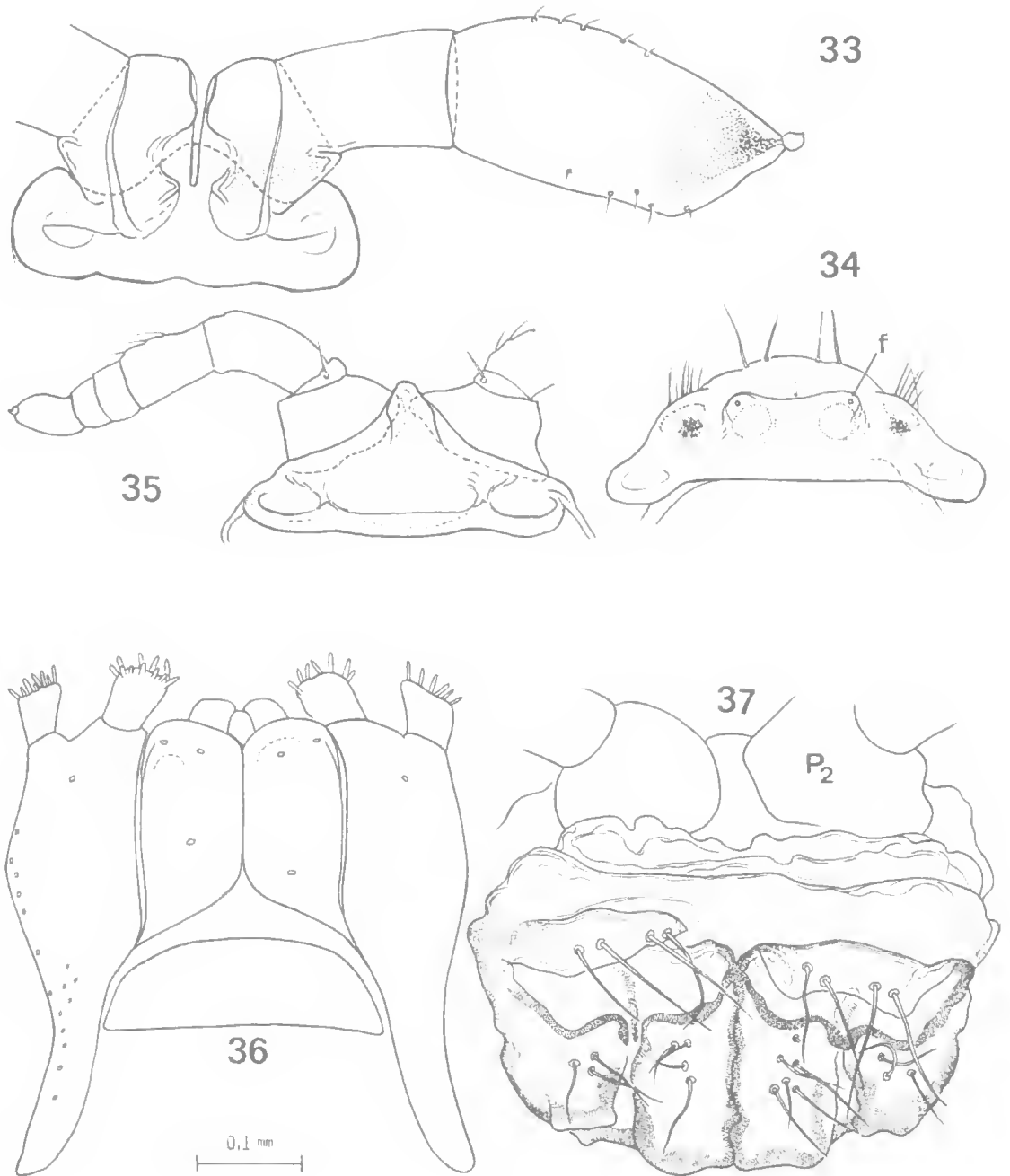
DIAGNOSIS

Eighth pair of legs of the male (gonopods), forming a block that is generally more or less transversely divided into two parts: an anterior part (sternite and angiocoxite) and a posterior part (colpocoxite and telopodite); the telopodite is always regressive (consisting of no more than a short stem or flagellum or small shield, or fused with the colpocoxite. The ninth pair of legs of the male (paragonopods) regressive usually simple. Gnathochilarium : mentum and promentum. Adults have 26-32 rings.

A list of families accompanied by their diagnoses were given by Mauriès (1982). These diagnoses are based essentially on gonopodal structures (eighth pair of legs of the male) and mainly on the relative development of three essential parts - a) telopodite, b) colpocoxite, c) angiocoxite + sternite, and on the telopodite's shape, position and degree of autonomy. The aim of the succinct key below, which uses these characteristics, is to place this new family in relation to the others:

KEY TO CLEIDOGONOIDEA FAMILIES

1. Eighth pairs of legs of the male : telopodite more or less fused with the colpocoxite making it difficult or impossible to distinguish..... Families Anthogonidae, Cleidogonidae, Rhiscosomididae, Tingupidae, Trichopetalidae.
Eighth pair : telopodite forming a flagellum, short stem, small plate or stump 2
2. Eighth pair : telopodite forming a flagellum or short stem, set laterally but inside the gonopodal



FIGS 33–37. *Neocambrisoma raveni* n.g., n.sp., preadult ♂ and ♀, paratypes: 33. ninth pair of preadult male, caudal view; 34. eighth pair of the same; 35. tenth pair of the same; 36. gnathochilarium of a ♀ paratype; 37. base of second pair and vulvae of the same

block between the anterior and posterior parts and therefore often hidden Families Brachychaeteumidae, Macrochaeteumidae, ?Niponiosomidae.

Eighth pair : telopodite a short stem, small shield or stump set outside the gonopodial block and therefore visible..... 3

3. Eighth pair : telopodite forming a short stem.. Families Branneriidae, Chamaesomidae, Kashmireumidae.

Eighth pair : telopodite forming a stump or small subrectangular shield, bearing several setae distad Family Peterjohnsiidae nov., for the single genus *Peterjohnsia*.

Peterjohnsia n.g.

DIAGNOSIS

Eighth pair of legs of the male (gonopods) with telopodites quite distinct from the colpocoxites, forming a subrectangular lamella not as wide as it is long, setigerous distad; colpocoxites forming elongated laminae clearly separated from each other by a large unpaired median process of the sternite. Ninth pair of legs of the male (paragonopods) with sternites forming a wide concave rectangular plate anteriorly, bearing telopodites similar to those on the gonopods. 30 rings in males, 32 in females. Rough teguments. Small soil forms (maximum length 6 mm).

TYPE-SPECIES

Peterjohnsia basimontana n.sp.

Peterjohnsia basimontana n.sp.

MATERIAL EXAMINED

HOLOTYPE: Australia, NE. Queensland, Bellenden Ker Range, Cableway base, alt. 100 m., Oct. 17-24, 1981, 1 ♂ (QM S.1481).

PARATYPE: Same data as holotype, 7 ♂ 2 ♀ j 9 and j. (QM S.1482); 2 ♂ 2 ♀ (MNHN, DA 213).

OTHER MATERIAL: Same area, Bellenden Ker Range, 1 km. south of Cable Tower 6, Oct. 17-24, 1981, alt. 500 m., Berlese No. 310, 1 ♂ 1 j. (QM S.1483); same locality, same date, Berlese No. 314, 1 ♂ 1 ♀ (QM S.1484); Berlese No. 317 1 ♂ j. 1 ♀ 1 ♀ (QM S.1485); Berlese No. 319, 3 ♂ 1 j. (QM S.1486); Berlese No. 320, 1 ♂ j. 2 ♀ j. (QM S.1487); same area, 1/2 km. south of Cable Tower 7, alt. 500 m., Nov. 3-5, 1981, 1 ♂ 1 ♀ (QM S.1488).

DESCRIPTION

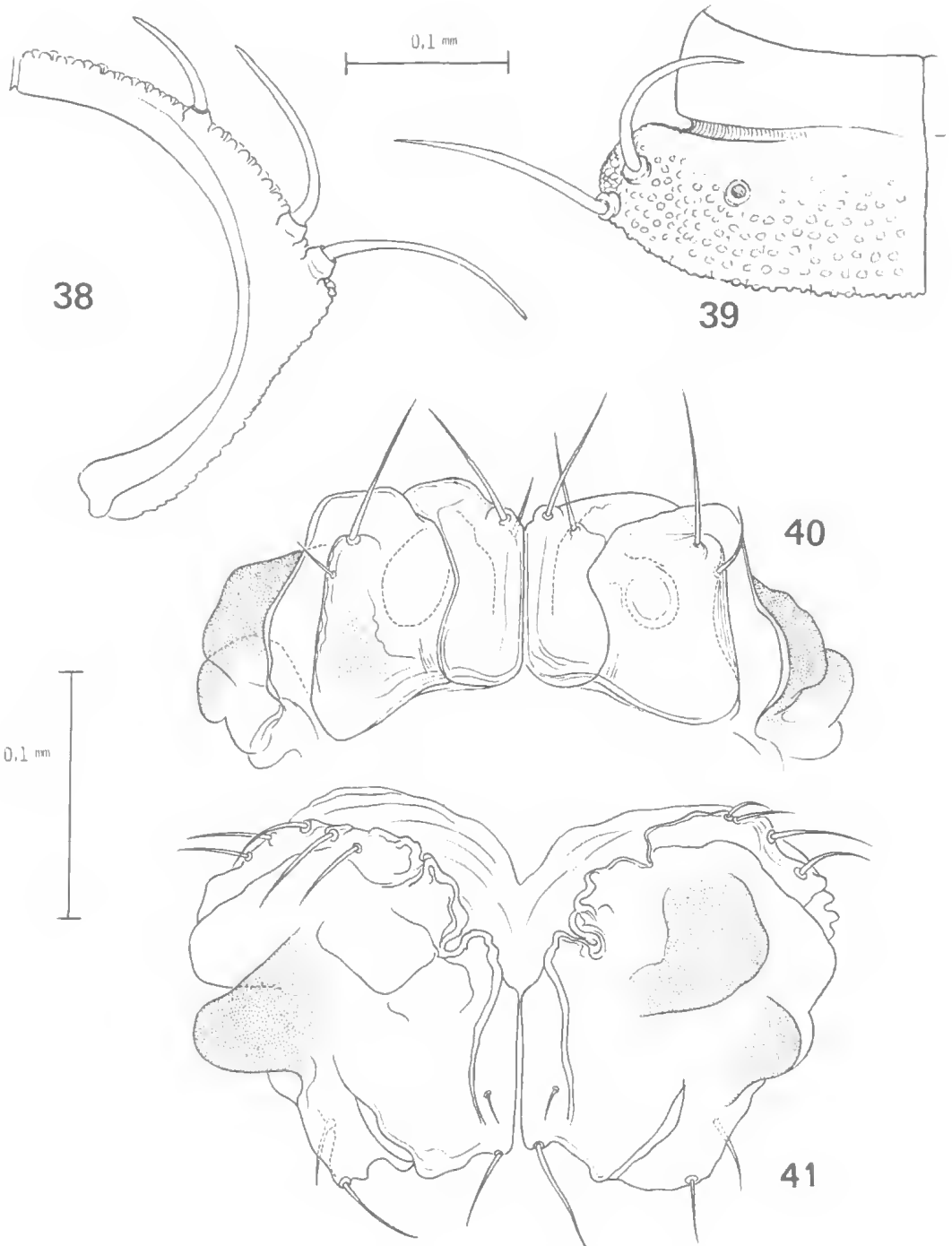
Overall colour brownish, more or less speckled, except for a white fusiform middorsal stripe that is fairly wide but narrows progressively anteriorly and posteriorly.

It should be noted that the length of certain individuals (values in parentheses in the Table 6) is exaggerated because of poor fixation.

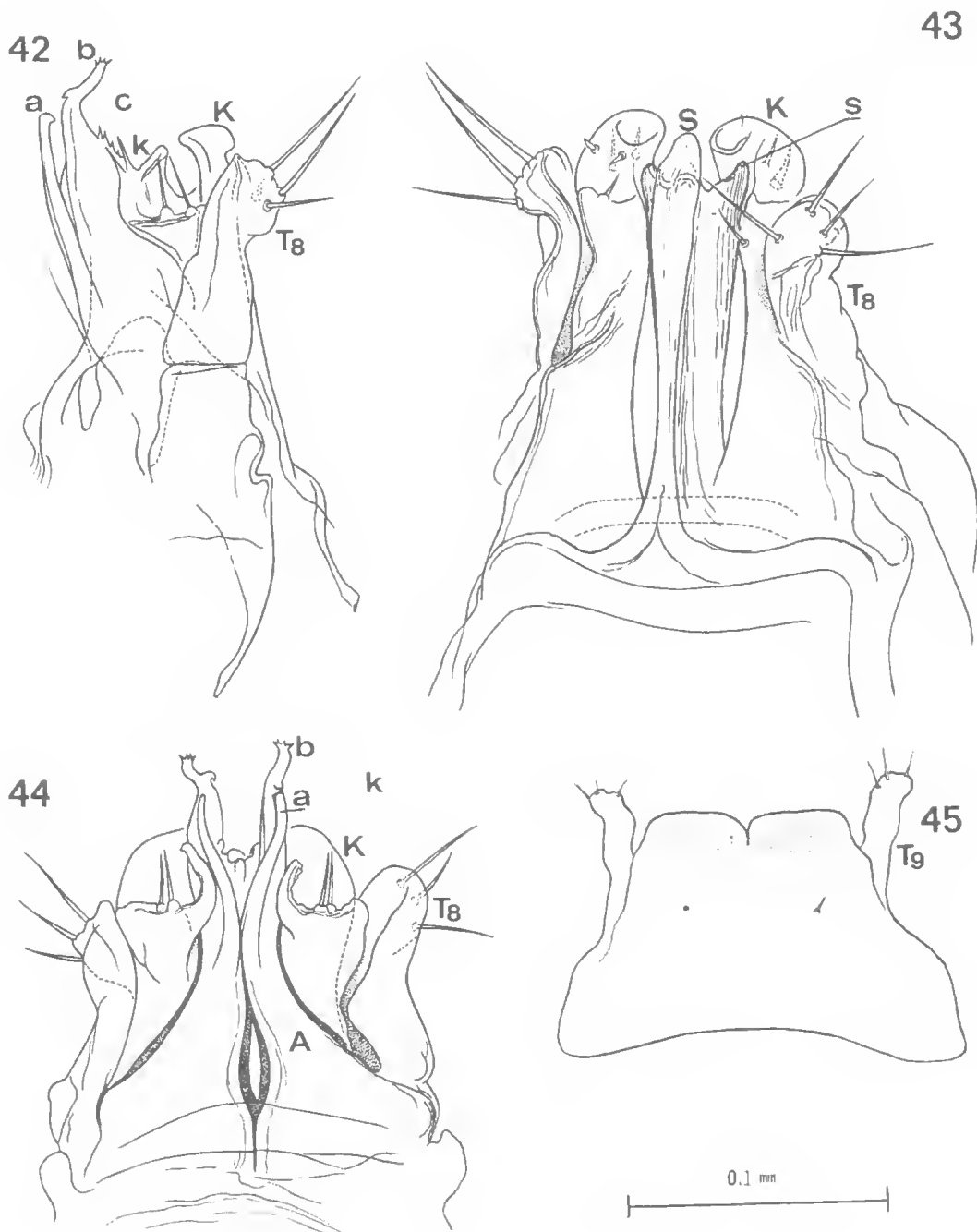
The number of rings (32) and of leg pairs (54) indicate that adult females have two apodous rings (including the epiproct) and one hemiapodous. Males, like preadult females, have 48 leg pairs, of which three are apodous (including the epiproct)

TABLE 6. *Peterjohnsia basimontana*: Measurements (mm), number of rings (N), leg pairs (lp) and ocelli.

	N	lp	Length	Vertical diameter	Width	Ocelli
♂ holotype	30	48	3	0.30	0.34	10(1.2.3.3.1)
♂ paratype	30	48	4.6	0.33	0.37	10(1.2.3.3.1)
♂ paratype	30	48	4	0.25	0.28	10(1.2.4.3)
♂ paratype	30	48	3	0.29	0.34	9(1.2.3.3)
♂ paratype	30	48	3.7	0.30	0.34	?
♂ paratype	30	48	3.6	0.36	0.40	10(1.2.3.3.1)
♂ paratype	30	48	3	0.36	0.40	9(1.2.3.3)
♂ paratype	30	48	4.6	0.36	0.40	11(1.2.3.3.2)
♂ j. (A-1)	27	40	2.25	0.25	0.28	8(1.2.3.2)
♂ j. (A-1)	27	40	2.90	0.30	0.34	9(1.2.3.3.2)
♀ paratype	32	54	(6.5)	0.46	0.52	11(1.2.3.3.2)
♀ paratype	32	54	4.8	0.40	0.45	11(1.2.3.3.2)
♀ paratype	32	54	(7.1)	0.45	0.51	11(1.2.3.3.2)
♀ paratype	32	54	5.7	0.40	0.45	11(1.2.3.3.2)
♀ paratype	32	54	(7.1)	0.46	0.52	12(1.2.3.3.3)
♀ paratype	32	54	(6.1)	0.38	0.43	11(1.2.3.3.2)
♀ paratype	32	54	4.6	0.44	0.50	11(1.2.3.3.2)
♀ paratype	32	54	(7.3)	0.46	0.52	12(1.2.3.3.3)
♀ j. (A-1)	30	48	3.4	0.35	0.40	10(1.2.3.3.1)
♀ j. (A-2)	27	40	(4.4)	0.31	0.35	8(1.2.3.2)
♀ j. (A-3)	23	32	3	0.25	0.28	7(1.2.3.1)



FIGS 38-41. *Peterjohnsia basimontana* n.g., n.sp., . paratype: 38. oral view of the left half of the midbody ring; 39. dorsal view of the same; 40. vulvae, caudal view; 41. the same, distal view.



Figs 42-45. *Peterjohnsia basimontana* n.g., n.sp., ♂ holotype: 42. eighth pair (gonopods), lateral view; 43. the same, oral view; 44. same, caudal view; 45. isolated ninth pair (paragonopods), caudal view.

and one hemiapodous. Young female with 27 rings, at stage A(adult)-2, like preadult males (at stage A-1), have 40 leg pairs, apodous rings (including the epiproct) and on hemiapodous. I was able to observe eight pairs of podous buds on this young female, which clearly indicates that it belongs to the stage preceding the preadult one (A-2). The only young female with 23 rings had 32 leg pairs (and 8 pairs of podous buds!) and therefore 4 apodous rings (including the epiproct) and one hemiapodous ring, thus putting her at the A-3 stage.

Short head capsule, with convex hairy face. Short, sturdy antennae (their length is equal to the width of an average metazonite); the length of the antennal club is 3 to 3.5 times longer than its width. The eyes are made up of a small number of pigmented ocelli (9-12 in adults) arranged in a longitudinally elongated oval patch. Gnathochilarium with divided mentum (triangular prominent); trapezoidal mentum; external palpus of the stipes is elongated (its length is 2.5 times its width) and is oblique and bears five spinnerets; the internal palpus is sturdy and enlarged distad, not quite as long as wide, with 8-10 spinnerets in its apical region. 12-combed mandibles.

Midbody rings: The surface of the metatergites is rough and granular. This aspect is not caused by small scales as in *Chamaesoma*, *Xystrosoma* or *Tingupa*, but is due to tiny hemispherical or truncated protuberances vaguely lined in ten or so transversal rows (Fig. 39). Each row contains about 30 granules on each side of the middorsal groove. Here and there, about every three to five granules is inserted a minute seta of the same length as the granules. The 3 + 3 macrosetae are long and thick (their length reaches 2/5 the width of the metazonites); the two outermost stick far out to the side while the innermost is a bit nearer to the middle one than to the middorsal groove. The metatergal shoulder is poorly developed and located midway up the flanks (Fig. 38).

Epiproct common, with a dorsal macroseta and two setae on either side.

Short legs, length less than the prozonite diameter.

MALE SEXUAL CHARACTERS: Nothing special about the legs located before and after the gonopod and paragonopods; no coxal glands on 10th and 11th pairs.

Eighth pair (gonopods, Figs 42-44) formed on either side and behind of a long median stalk sprouting from the oral transversal sternal band. This stalk gets progressively larger and forms, subdistad, a laterodistal angle on each side (s) and

middistad, a club-like structure (S). Angiocoxites (A) set posteriorly, not fused sagittally, growing progressively thinner from the base to the summit and becoming bifid halfway up: a short branch (a) in the caudal position and a long one (b) further forward; the latter's anterior profile is denticulated (c). Colpocoxites (K) forming two plates separated both by the sternal projection and the angiocoxites; their distal profile is regularly rounded, their oral side scattered with several small setae, their caudal side marked by a heavy subdistal transversal crest bearing two thick setae and extended on the internal distal side by a small leaf (k) whose edge, when viewed laterally (Fig. 42), appears to be partially cut into spines. Finally the telopodites look exteriorly like subrectangular plates with rounded distal edges and three or four long and sturdy setae.

Ninth pair (paragonopods, Fig. 45) reduced to a large subtrapezoidal sternite flanked by stumps (telopodites, T9) like those on the gonopod.

FEMALE SEXUAL CHARACTERS: The vulvae (Figs 40-41) are not fused sagittally by their internal valves. These are much shorter than the external ones, which are marked by voluminous refringent protuberances. Low opercule, bordered by 4-5 long setae.

Peterjohnsia summa n.sp.

MATERIAL EXAMINED

HOLOTYPE: Australia, NE. Queensland, Bellenden Ker Range, summit TV station, litter, Berlese No. 336, alt. 1560 m., Nov. 1-7, 1981, 1 ♀ (QM S.1489).

PARATYPES: Same data as holotype, 5 ♂ and 3 ♀ (QM S.1490). Same locality, same date, Berlese No. 337, 3 ♂ 2 ♀ (QM S.1491); Same locality, same date, Berlese No. 338, 1 ♂ 3 ♀ (QM S.1492); Same locality, same date, Berlese No. 335, 1 ♂ (QM S.1493); Same locality, same date, Pyrethrum, on rainforest foliage, 1 ♂ (S.1494); Same locality, Oct. 25-31, 1981, 2 ♂ j. 7 ♂ 6 ♀ j. (QM S.1495) and 2 ♂ 3 ♂ 1 ♀ j. (MNHN, DA 213).

OTHER MATERIAL. Same area, Mount Bartle Frere, NW Center Peak Ridge, alt. 1400-1500 m., Berlese No. 358, Oct. 7-8, 1981, 1 ♂ 7 ♀ (QM S.1496); Mount Bartle Frere, South Peak summit, alt. 1620 m., Berlese No. 369 (rain forest, sieved litter), Nov. 6-8, 1981, 3 ♂ 9 ♀ (QM S.1496), 1 ♂ (MNHN, DA 213); Bellenden Ker Range, Cable Tower 3, alt. 1054 m., Nov. 25-31, 1981, 1 ♂ 1 ♀ j. (QM S. 1498).

DESCRIPTION

Identical to the preceding species both in habitus and colour as well as in the relative dimensions of antennae, the gnathochilarium, the shape of the metatergal shoulders, the superficial texture of the teguments and the position of the macrosetae.

Even the dimensions (slightly larger here) and the number of ocelli are comparable, as shown in Table 7.

MALE SEXUAL CHARACTERS: Quite similar to those of the type-species, they differ from it only in certain minute details and in two more important aspects (Figs 46-49):

1. There is no trace of any separation at the base of the telopodites of the eighth pair (gonopods);

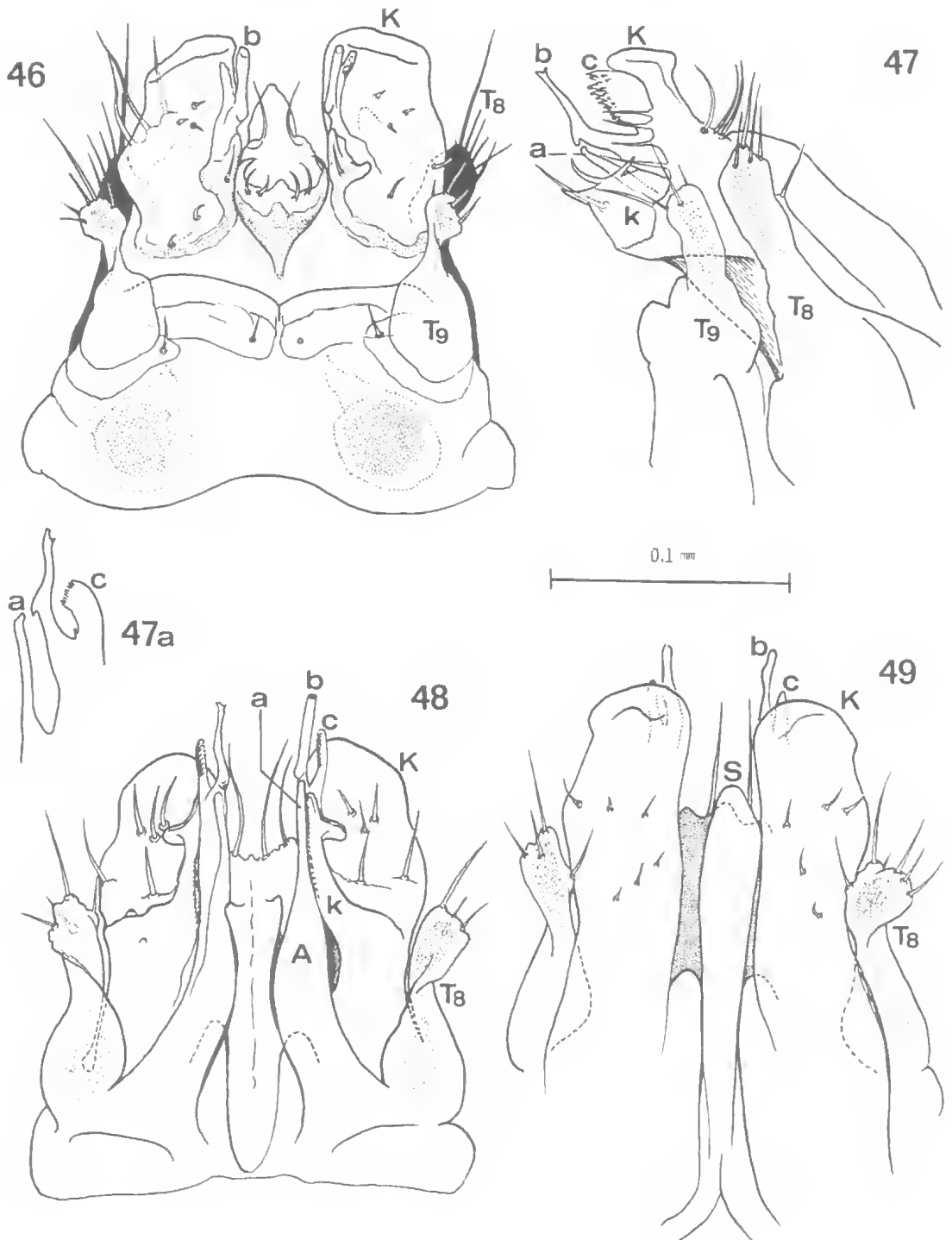
2. There is a third anterior branch (c), shorter

than the two others, bearing spinules apically. These spinules are also found in the type-species but are not carried on a differentiated branch (compare Figs 42 and 47a).

FEMALE SEXUAL CHARACTERS: When Figs 40 and 50 (oral view) and 41 and 51 (distal view) are compared, no significant difference between the two species is obvious, except for the absence of protuberances in *P. summa*, and perhaps in the distribution of setae.

TABLE 7. *Peterjohnsia summa*: Measurements (mm), number of rings (N), leg pairs (lp) and ocelli.

	N	lp	Length	Vertical diameter	Width	Length antenna	Ocelli
BKR, Berl. 336 ♂ holotype	30	48	4.3	0.38	0.52	0.40	10(1.2.3.3.1)
♂ paratype	30	48	4.2	0.38	-	-	9(1.2.3.3)
♂ paratype	30	48	4.2	0.40	-	-	10(1.2.3.3.1)
♂ paratype	30	48	4.2	0.41	-	-	10(1.2.3.3.1)
♂ paratype	30	48	4.3	0.40	-	-	10(1.2.3.3.1)
♂ paratype	30	48	4.1	0.42	-	-	10(1.2.3.3.1)
♀ paratype	32	54	5.2	0.53	-	-	11(1.2.3.3.2)
♀ paratype	32	54	5	0.48	-	-	11(1.2.3.3.2)
♀ paratype	32	54	4.6	0.48	-	-	11(1.2.3.3.2)
BKR, Berl. 338 ♂ paratype	30	48	4.3	-	0.49	-	10(1.2.3.3.1)
♀ paratype	32	54	4.7	0.50	0.62	-	11(1.2.3.3.2)
♀ paratype	32	54	4.8	-	0.61	-	13(1.2.3.3.3.1)
♀ paratype	32	54	4.7	-	0.59	-	10(1.2.3.3.1)
BKR, Oct. 25-31 ♂ paratype	30	48	5	0.40	-	0.50	8/9(1.2.2.2/3.1)
♂ paratype	30	48	4.4	0.40	-	-	10(1.2.3.3.1)
♂ paratype	30	48	4.8	0.42	-	-	10(1.2.3.3.1)
♂ paratype	30	48	4.8	0.40	-	-	10(1.2.3.3.1)
♂ paratype	30	48	4.7	0.38	-	-	10(1.2.3.3.1)
♂ paratype	30	48	5	-	0.55	-	9(1.2.3.3)
♂ paratype	30	48	4.4	-	0.55	-	10(1.2.3.2.1.1)
♀ paratype	32	54	(7.3)	0.50	-	-	12(1.2.3.4.2)
♀ paratype	32	54	6.1	0.50	-	-	11(1.2.3.3.2)
♀ paratype	32	54	4.8	0.46	-	-	10(1.2.3.3.1)
♀ paratype	32	54	5.8	0.52	-	-	11(1.2.3.3.2)
♀ paratype	32	54	5.9	0.51	-	-	11(1.2.3.3.2)
♀ paratype	32	54	4.9	0.50	-	-	11(1.2.3.3.2)
♀ paratype	32	54	5	0.53	-	-	11(1.2.3.3.2)
♀ paratype	32	54	5.3	0.45	-	-	11(1.2.3.3.2)
♀ j. (A-1) paratype	30	48	4.2	-	0.51	-	10(1.2.3.3.1)
♀ j. (A-1) paratype	30	48	3.8	0.42	-	-	10(1.2.3.3.1)
♀ j. (A-1) paratype	30	48	4.3	-	0.51	-	9(1.2.3.2.1)
♀ j. (A-1) paratype	30	48	4.9	0.43	-	-	12(1.2.3.4.2)
♀ j. (A-2) paratype	27	40	3.7	0.32	-	-	8(1.2.3.2)
Bartle Frere ♂	30	48	4.4	0.40	0.55	-	9(1.2.3.2.1)
♀	32	54	4.9	0.50	-	-	11(1.2.3.3.2)
♀	32	54	4.9	0.51	-	-	10(1.2.3.3.1)
♀	32	54	5.1	0.52	-	-	11(1.2.3.3.2)
♀	32	54	4.9	0.48	-	-	10(1.2.3.3.1)
♀	32	54	5	0.50	-	-	9(1.2.3.3)
♀	32	54	4.9	0.52	-	-	10(1.2.3.3.1)
♀	32	54	4.8	0.50	-	-	9(1.2.2.2.2)



FIGS 46-49. *Peterjohnsia summa* n.g., n.sp., ♂ holotype: 46. caudal-ventral view (in black, telopodites of gonopods), of eighth pair (gonopods) and 9th pair (paragonopods); 47. isolated eighth pair, lateral view, 47a. detail of extremity of angiocoxite, lateral view; 48. isolated eighth pair, caudal view, 49. the same, oral view.

Peterjohnsia ludovicensis n.sp.

MATERIAL EXAMINED

HOLOTYPE: Australia, NE. Queensland, Hilltop 5.5 km north of Mount Lewis, alt. 1200 m., Berlese No. 297 (rainforest, sieved litter), Sept. 13, 1981, G. Monteith and D. Cook, 1♂ (QM S.1499).

PARATYPES: Same area, 5.5 km north of Mount Lewis, via Julatten, alt. 1100 m., Berlese No. 276 (rainforest, sieved litter), Sept. 8, 1981, G. Monteith & D. Cook, 1♂ (QM S.1500).

DESCRIPTION

Identical in external morphological

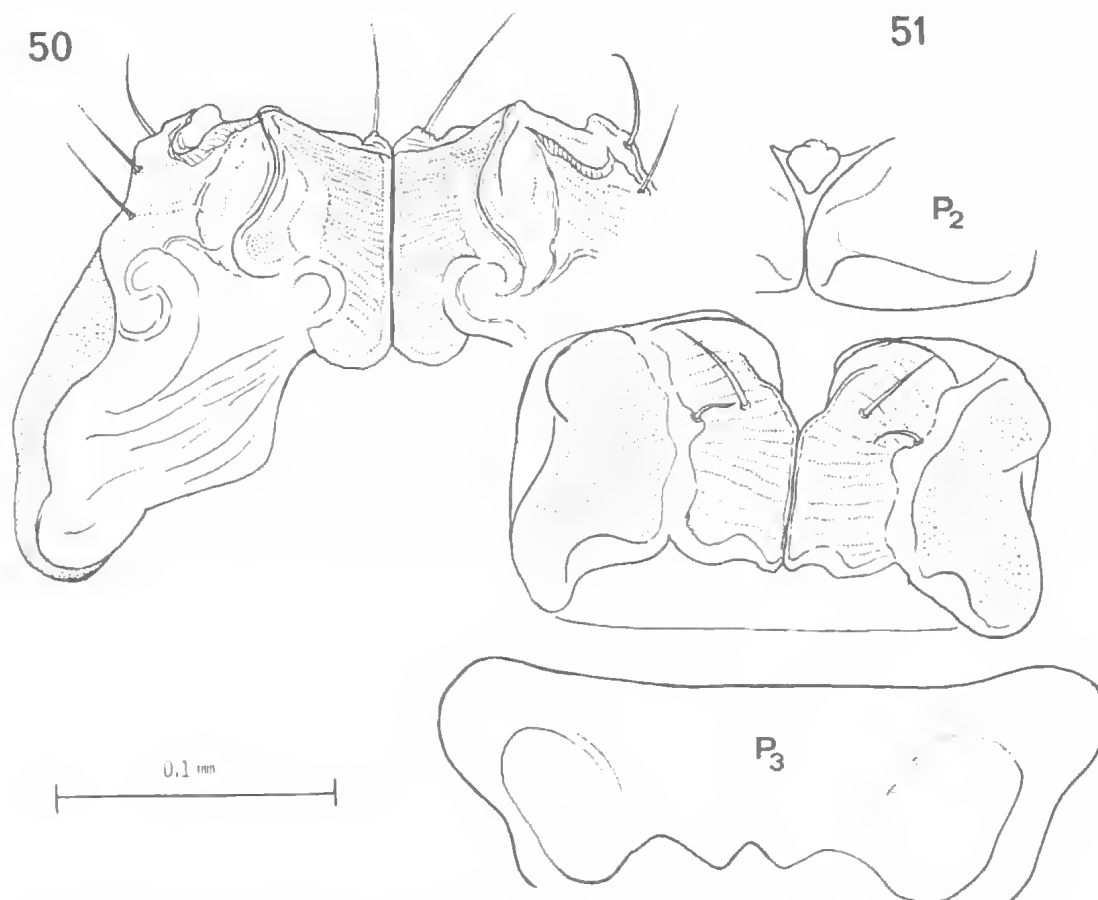
characteristics to other species. No significant difference is indicated by the measurements and number of ocelli, as can be seen in Table 8.

MALE SEXUAL CHARACTERS: The following differences can be observed:

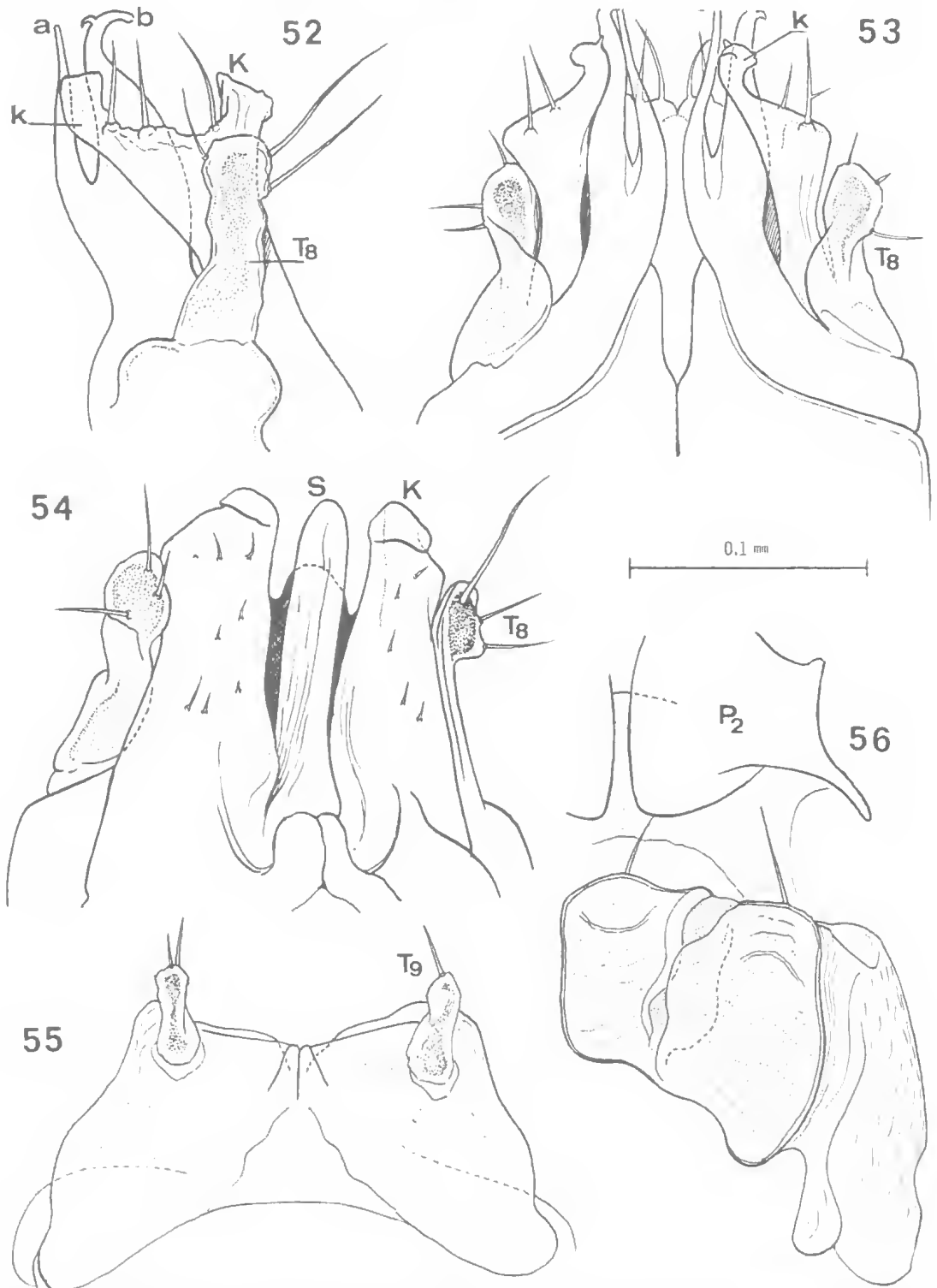
1. the foliated part K (anterior) of the colpocoxite is lower than the posterior branch (k) and therefore not visible in the caudal view (Fig. 53);
2. the angiocoxite (A) is bifid as in *basimontana*, but here, there is no trace of any spines on the

TABLE 8. *Peterjohnsia ludovicensis*: Measurements (mm), number of rings (N), leg pairs (lp) and ocelli.

	N	lp	Length	Vertical diameter	Width	Length antenna	Ocelli
♂ holotype	30	48	4.25	0.35	0.53	0.47	10(1.2.3.3.1)
♀ paratype	30	48	4.20	0.33	0.46	-	10(1.2.3.3.1)
♂ paratype	32	54	5.50	0.40	0.58	-	11(1.2.3.3.2)



FIGS 50-51. *Peterjohnsia summa* n.g., n.sp., - paratype: 50. vulvae, caudal view; 51. the same, distal view.



FIGS 52-56. *Peterjohnsia ludovicensis* n.g., n.sp., ♂ holotype, ♀ paratype: 52. eighth pair ♂ (gonopods), lateral view; 53. the same, caudal view; 54. the same, oral view (slightly oblique); 55. ninth pair (paragonopods); 56. base of second left leg and left vulva, caudal view.

anterior part ('c' in figs. 42 and 47a) and the long, slender posterior branch (a) is, in this case, the same length as the oral branch (b), which here is shorter and sturdier than in the other species;

3. on the ninth pair (paragonopods, Fig. 55), the telopodites are located in a less lateral position.

FEMALE SEXUAL CHARACTERS: Fig. 56 reveals no important difference from the two other species; vulvar pilosity is even more sparse than in *P. summa*, as here there is only a single distal seta on each side of the vulva (one per valve).

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